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ABSTRACT

A study examined the characteristics of effective secondary vocational education programs for a variety of special needs populations (disabled, disadvantaged, and limited English proficient individuals; single parents; and persons enrolled in programs to eliminate sex bias and sex stereotyping). The following eight states were studied: California, Colorado, Nebraska, New Hampshire, North Carolina, Ohio, Pennsylvania, and Texas. Data were collected from a review of the literature, site visits to local schools, and a mail questionnaire to state coordinators of secondary vocational education programs for special populations. Encouragement of parental and community involvement, class sizes ranging from 11-15 students, and positive social interactions between special population and nonspecial population students were all associated with program success. Successful programs appeared to have staff members who were willing to experiment, were nonbiased toward special populations, served as positive role models, and had experience in both their subject area and methods of teaching special populations. Most successful programs coordinated sources from multiple funds to maximize their effective use. Preassessment of learning styles and special problems, individual education plans, readiness to modify curricula to meet individual needs, and supportive services all appeared linked to program success. It was concluded that program evaluations should focus on a variety of input, process, and outcome variables and that student evaluation should include assessment of students' skill development and personal growth related to attitudes and behaviors. (MN)

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CHARACTERISTICS OF EFFECTIVE SECONDARY VOCATIONAL EDUCATION PROGRAMS FOR SPECIAL POPULATIONS

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FOREWORD

If vocational educators are to make substantial progress in improving secondary vocational education programs for special populations, it is essential that they have information about the characteristics of effective programs and realistic guidelines for program evaluation. This country has placed great importance on providing programs and services to special populations. It is essential that policymakers and decision makers at the federal, state, and local levels have information that allows them to optimize their limited resources in order to provide the most effective programs and services possible.

This report of characteristics of effective programs is one of two reports resulting from a study by National Center staff to provide information about secondary vocational education programs for special populations. The second report, Guidelines for Evaluating Secondary Vocational Education Programs for Special Populations, focuses on broad guidelines to use in evaluating programs.

The National Center is indebted to the consultants and to the staff members who worked on the study. Consultants for the study were Dr. Edgar I. Farmer, North Carolina State University; Dr. Seymour Lesh, National Child Labor Committee; Dr. James P. Lewis, Pennsylvania Department of Education; and Dr. L. Allen Phelps, University of Illinois. The study was conducted in the Evaluation and Policy division under Dr. N. L. McCaslin, Associate Director, The National Center for Research in Vocational Education.

The project was initiated and data collected under the direction of Dr. Stephen J. Franchak, Senior Research Specialist. The writing of the report was completed under the direction of Dr. Floyd L. McKinney, Senior Research Specialist. Project staff members were Marie A. Parks, Program Assistant; and Robert A. Mahlman, Paul V. Unger, and Michael Smith, Graduate Research Associates. Final editorial review of this report was provided by the Editorial Services area of the National Center under the direction of Judy Balogh.

The primary audiences for this report are vocational education evaluators; national, state, and local vocational educators concerned with vocational education programs for special populations; and policymakers at the national, state, and local levels.

This project was sponsored by the Office of Vocational and Adult Education, U. S. Department of Education.

Ray D. Ryan
Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

This study has attempted to identify the characteristics of effective secondary vocational education programs for special populations (handicapped, disadvantaged, limited English proficient, single parent, and individuals enrolled in programs to eliminate sex bias and sex stereotyping). Data for the study came from a review of the literature, on-site visits to local schools, and a mail questionnaire to state coordinators of secondary vocational education programs for special populations. Based on the analysis of the data, the following were identified as characteristics of effective programs.

- o Community Setting
  - School personnel should encourage parental involvement in the program.
  - School personnel should actively and systematically provide parents with information concerning programs and services available to the parents and the students.
  - Public awareness programs should be included in school activities.
  - School personnel should educate employers in order to dispel common misconceptions about employing special populations workers.
  - School personnel should routinely be involved in developing contacts with employers.
  - Employers and other community members should hold positions on school advisory committees.
- o Classroom Setting and Facilities
  - The number of students in classes with special populations students should range from 11-15 students.
  - Positive social interactions between special populations students and nonspecial populations students should be encouraged.
  - All students should have easy access to and movement through the classroom.

- Assessment of equipment needs should be made on an individual basis.

- Special equipment that cannot be purchased should be custom built on the premises.

- A school staff member should be assigned the responsibility of obtaining and providing information to special populations students on the types of special equipment available.

- School personnel should put forth an extra effort to accommodate the architectural and equipment needs of the students.

o Personnel Characteristics

- Staff should be willing to experiment and should be innovative in the search for the most effective methods of teaching each special populations student.

- Teachers should be positive role models and should attempt to alleviate social rejection by the student's classmates.

- School personnel should be nonbiased toward special populations students.

- School personnel should enjoy working with special populations students and should be willing and able to work with students on an individual basis.

- School personnel should show patience when working with students.

- Teachers should have confidence in their abilities to work with special populations students.

- Administrators should have positive attitudes toward accommodating special populations students and be supportive of teachers.

- School personnel should have expertise in their subject field and additional training to work with special populations students.

- Financial

  - Multiple sources of funds are coordinated to maximize their effective and efficient use.

  - Funds should be available to maintain up-to-date equipment and materials.

- Preassessment

  - Identification of learning styles, physical and/or behavior problems, and vocational interests and abilities should begin as early in the student's educational program as possible, particularly before the student enters high school or a vocational program.

  - Preassessment should be included as a part of career education or career exploration programs.

  - Vocational evaluators should conduct the diagnosis and should prepare the recommendations for all interested parties.

  - A variety of assessment tools and methods should be used during the preassessment process including background data (students' family background, medical information, and educational performance); personal interview (students' interests, attitudes, and behaviors); formalized testing (documented data on students' basic skills and vocational aptitudes and abilities); hands-on assessment (student experiences the type of work involved in the vocational program); and exit interview (information is distributed to all interested parties).

- Individual Education Plans

  - All persons responsible for handicapped students should be involved in the development of the individual education plan (e.g., parents, vocational counselors, special education teachers, vocational teachers).

  - The staff of the vocational education department should be included in the preparation of the vocational component of the individual education plan, particularly the instructors who will be working with the handicapped student.

- Coordination should occur between the special education and the vocational education instructors in implementing the objectives stated in the individualized education plan and in evaluating the extent to which the goals are achieved.

o Modifying Curriculum

- Modifications should be made based on the students' individual needs identified through the vocational assessment process and the individualized education plans.

- Professionals such as vocational instructors, special education teachers, special populations coordinators, and administrators should work together to modify the curriculum.

- Modifications should include changing the instructional content, the instructional practices, and the instructional materials to coordinate with students' needs.

- Instructional content should be adjusted to focus on subject areas that include self-esteem, basic skills, work attitudes and behaviors, job seeking skills, independent living skills, prevocational and vocational skills.

- Teachers should use a variety of alternative methods and strategies for instruction based on the levels and learning styles of students (e.g., individualized instruction, competency-based instruction, job simulation, on-the-job training, computer-aided instruction, audiovisual aids, and group instruction).

- Instructional materials should be developed by special education, vocational personnel, and other school personnel to address individual needs.

- Materials used for special populations should include hands-on activities for students.

o Support Services

- Support services should be provided for special populations students and the vocational instructors.

- A full-time coordinator should be assigned to ensure that the appropriate services are identified and monitored.

- A combination of educational agencies and community-based organizations should be involved in providing services to special populations (i.e., health, social service, welfare, and rehabilitation agencies, and vocational education, special education, and regular education organizations).

- An effective and supportive administration should ensure the implementation of services for vocational instructors and for the special population student.

- Inservice activities should be provided that address appropriate topics and involve qualified special populations professionals on a consultative basis.

- Vocational instructors should have teacher aides or volunteers available for assistance with instruction in or out of the classroom.

- Vocational support staff should be available to assist vocational instructors with any problems.

o Program Evaluation

- Teachers, students, administrators, parents, and others who are involved in the program should also be involved in the evaluation of the program.

- A variety of input, process, and outcome variables should be considered during the evaluation.

- Evaluation reports should be used for program planning, improvement, accountability, and legal compliance.

o Student Evaluation

- Student evaluation should involve monitoring the students' skill development and personal growth in attitudes and behaviors.

- Information obtained through the evaluation process should be used to inform students, parents, and administration of student progress and what is necessary to improve performance.

- Traditional techniques of student evaluation (e.g., written tests) should be altered (e.g., teacher or aide reads test, or test items are written at lower reading levels) to assess special populations students accurately and according to their unique characteristics.

- Techniques most often used for evaluating special populations students should include formal testing (paper-and-pencil tests), performance testing, work simulation, and observations.

o Student characteristics

Although not a part of the search for characteristics of effective programs, analysis of the data revealed the following general characteristics of special populations students in secondary vocational education programs:

- Immature behavior
- Short attention span
- Easily frustrated and bored
- Negative self-image and lack of self-confidence
- Lack of communication skills
- Performance below grade level
- Poor health characteristics
- Family income generally at or below poverty level

Providing effective vocational education programs for special populations involves a network of interrelated people, processes, and structures. The characteristics of effectiveness identified in this study function independently, yet contribute as a whole to providing quality vocational education programs for special populations. The characteristics, however, vary across schools and programs and are likely to vary over time.

CHAPTER 1

INTRODUCTION

IMPORTANCE OF STUDY AREA

The Carl D. Perkins Vocational Education Act of 1984 (P.L. 98-524), the Vocational Education Amendments of 1976 (P.L. 94-482), the Education for All Handicapped Children Act of 1975 (P.L. 94-142), section 503 and 504 of the Rehabilitation Act of 1973, the Comprehensive Employment and Training Act of 1978, and the Job Training Partnership Act of 1982 (P.L. 97-300) address the need for special populations to have full access to quality vocational education programs that lead to productive and satisfying employment. Continuing federal interest in serving special populations has been hampered by a lack of meaningful information about how secondary vocational education programs for special populations can be improved.

In the Vocational Education Amendments of 1976, Congress prescribed at least 28 specific requirements related to federal, state, and local program evaluation activity (Wentling 1980). Some states had evaluation systems in operation that needed only minor changes to comply with the 1976 mandates; however, most states had to develop entirely new evaluation systems capable of systematically evaluating all vocational programs (Smith and Holt 1979, 1980; Wentling and Russo 1978). A number of studies also were commissioned by the National Institute for Education to determine how well the states had implemented the evaluation requirements of the 1976 amendments (Smith and Holt 1979; Beuke et al. 1980; Wentling 1980; and Wentling and Barnard 1982). None of these studies provided any specific information about how states evaluated vocational education programs for special populations.

The lack of vocational education program evaluation information for special populations deters efforts toward program improvement. Effective school research (Mackenzie 1983; Purkey and Smith 1982; Sirotnik 1984; McKinney et al. 1985) suggests that program improvement is most likely to occur when certain conditions exist in a program evaluation effort. Conditions such as stakeholder support, meaningful information, context-specific recommendations, and stakeholder recommendations are essential components of program evaluation efforts if they are to result in program improvement. Current evaluation efforts generally do not include these conditions (McKinney et al. 1985). If meaningful secondary vocational education programs are to be provided for special populations, it is essential to have information about the characteristics of effective programs and to have evaluation guidelines that will assist educators to improve current program efforts.

STUDY OBJECTIVES

The objectives of this study were--

- to determine the characteristics of effective secondary vocational education programs for special populations, and
- to develop guidelines for assessing the effectiveness of secondary vocational education programs for special populations.

The information presented in this report deals with the first objective--determine the characteristics of effective secondary vocational education programs for special populations. The second objective is addressed in a companion report, Guidelines for Evaluating Secondary Vocational Education Programs for Special Populations.

DEFINITIONS

Special populations definitions used in the study are from the Department of Education's Federal Register.

1. Disadvantaged--individuals (other than handicapped individuals) who have economic or academic disadvantages and who require special services and assistance in order to enable them to succeed in vocational education programs. This term includes individuals who are members of economically disadvantaged families, migrants, individuals who have limited English proficiency, and dropouts from, or identified as potential dropouts from, secondary school (1985).

2. Handicapped--individuals who are mentally retarded, hard of hearing, deaf, speech impaired, deaf-blind, multihandicapped, or specific learning disabled, who by reason thereof require special education and related services, and who, because of their handicapping condition, cannot succeed in the regular vocational education program without special education assistance (1985).

3. Limited English proficient--individuals (1) who were not born in the United States, or whose native language is a language other than English; who came from environments where a language other than English is dominant; or who are American Indian and Alaskan Native students and who come from environments where a language other than English has had a significant impact on their level of English language proficiency; and (2) who by reason thereof, have sufficient difficulty speaking, reading, writing, or understanding the English language to deny

these individuals the opportunity to learn successfully in classrooms where the language of instruction is English or to participate fully in our society (1985).

4. Single parent--an individual who is unmarried or legally separated from a spouse and has a minor child or children for which the parent has either custody or joint custody (1985).

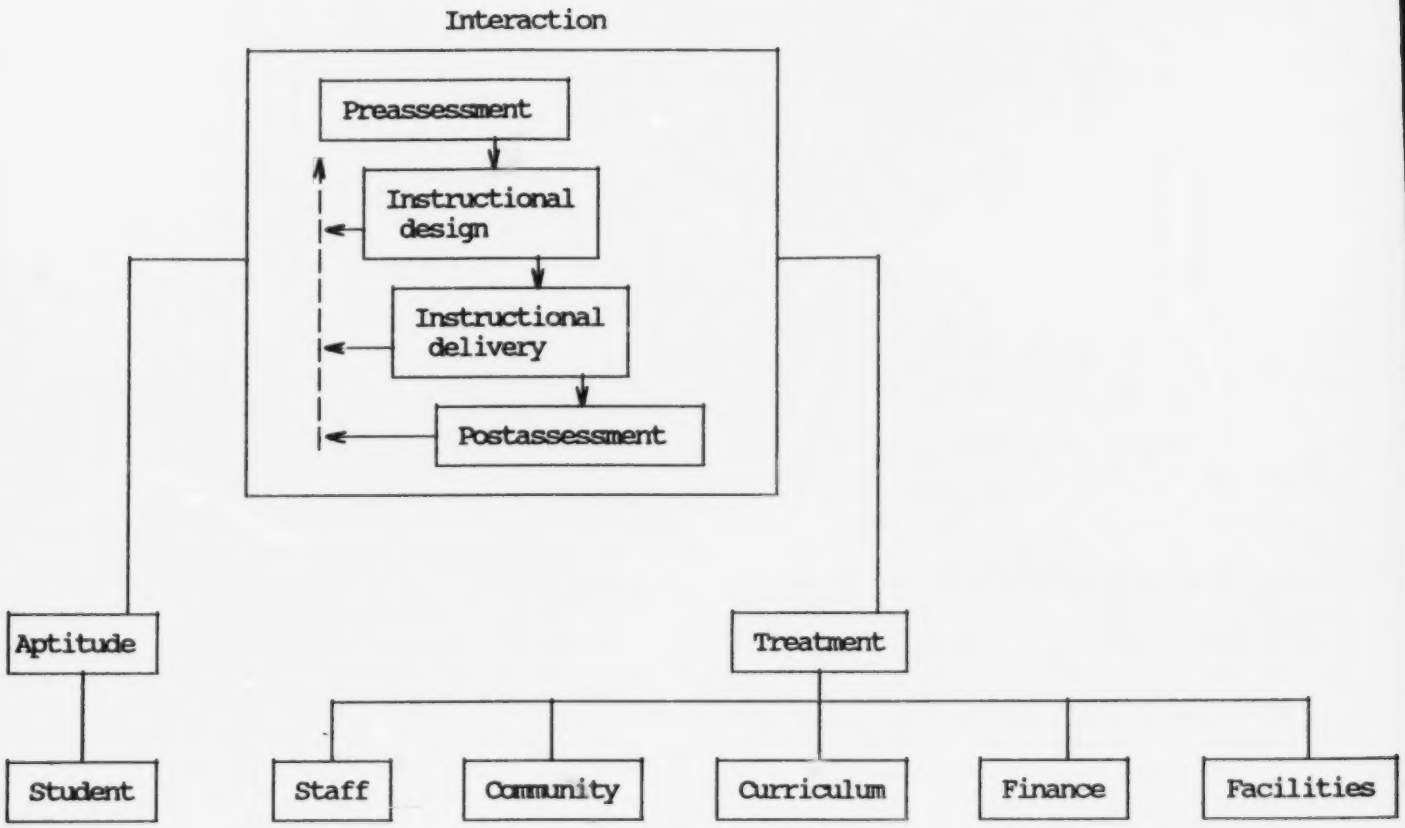
5. Sex bias and sex stereotyping--sex bias means behaviors resulting from the assumption that one sex is superior to the other. Sex stereotyping means attributing behaviors, abilities, interests, values, and roles to a person or group of persons on the basis of their sex (1977).

STUDY FRAMEWORK

An organizing framework was necessary to determine the types of information to collect to describe characteristics of effective vocational education programs for special populations and to identify guidelines for evaluating such programs. An organizing framework was also essential to give direction to the format and content of the study reports.

The legislative intent of vocational education programs for special populations is to provide educational and related services that maximize institutional and individual outcomes. A framework consistent with this interpretation of the legislative intents was developed by Russo (1980) based on the work of Cronbach and Glaser (1965) concerning the Aptitude-Treatment-Interaction (ATI) educational model. The ATI model maximizes performance for each learner by ensuring an appropriate environment within which learning can occur. This study framework, shown in figure 1, provides attention to the learner and to the interaction activities essential to the design, implementation, and evaluation of the diverse factors impacting on the delivery of treatment. In figure 1, a number of inputs (staff, community, and so forth) must be considered in the delivery of programs.

As Russo (1980) indicated, the study framework lends itself to a decision-oriented evaluation approach. The interaction processes are closely aligned to the Content-Input-Process-Product (CIPP) evaluation model proposed by Stufflebeam et al. (1971). The total study framework provides an indication of areas to address in determining the effective characteristics of secondary vocational education programs for special populations.



Source: Russo (1980)

Figure 1. Study framework.

CHAPTER 2

STUDY PROCEDURES

This chapter describes the procedures used in conducting the study. Information is presented concerning the study approaches and the sampling plan.

STUDY APPROACHES

In order to provide a more comprehensive set of information for analysis, the project staff used three different research approaches: literature review, on-site visits to local schools, and mail questionnaires. These study approaches were chosen in order to provide a mixture of qualitative and quantitative information. The combination of qualitative information from the local site visits and the quantitative information from the questionnaires sent to the state vocational education special population coordinators permitted the project staff to substantiate findings in a variety of ways from more than one source. An overview of the study is shown in figure 2.

Literature Review

The literature review was conducted to determine previous research in the area of characteristics of effective secondary vocational education programs for special populations, to identify guidelines for evaluating secondary vocational education programs for special populations, and to assess where additional information is needed to extend or modify what is known about the evaluation of secondary vocational education programs for special populations. The study findings indicate that the characteristics of effective programs are similar to those of the general effective school research. Minimal information is available regarding the evaluation of secondary vocational education programs for special populations.

Literature was obtained from a number of sources: Research in Education (RIE), Abstracts of Instructional and Research Materials in Vocational Education, Resources in Vocational Education (RIVE), Current Index to Journals in Education (CIJE), Educational Resources Information Center (ERIC), and Social Sciences Retrospective of The Ohio State University's Mechanized Information Center. Reports addressing the two study objectives were obtained and reviewed.

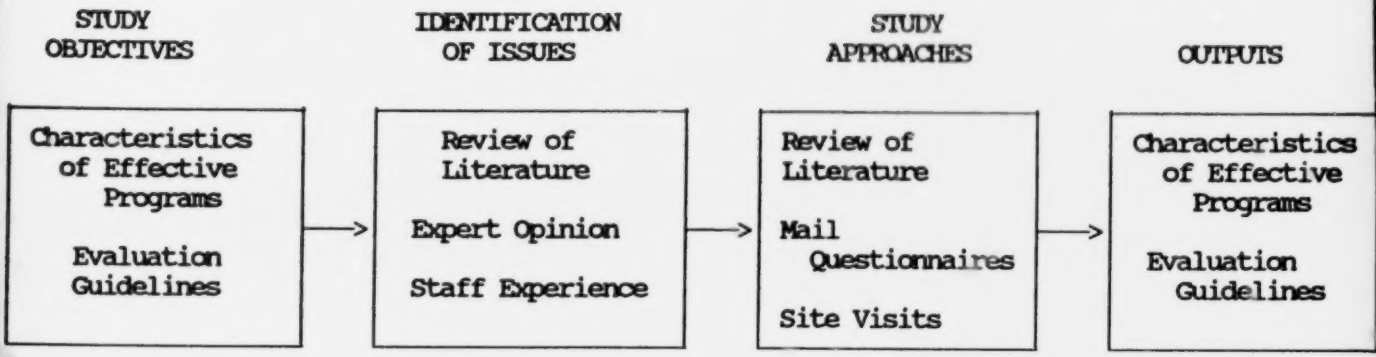


Figure 2. Overview of the study.

Site Visits

Sampling Plan

The selection of states and schools for the local site visits was a judgemental process. States were selected so as to achieve geographical balance, a mixture of urban and rural characteristics, variations in vocational education enrollments, and variations in population density. The local sites were suggested by state vocational education staffs for special populations on the basis of the exemplary nature of special population programs. State coordinators were asked to suggest sites having the following characteristics:

- Assessment procedures that provide appropriate instructional, health, financial, and personal services.
- Assessment or evaluation procedures that provide incremental programmatic improvement.
- Prevocational training for students that provides vocational sampling or exploration prior to or concurrently with actual training.
- Specialized or supplemental instruction that provides remediation or improvement of different basic educator skills.
- Staff development activities that provide for improvement of staff effectiveness in serving special needs subpopulations.
- Job placement and follow-up services that provide initial placement and periodic review of special needs populations.
- Provisions of a mainstream instructional approach or special classes are designed to prepare special needs populations to integrate into the mainstream.

All local sites were secondary programs located in comprehensive high schools, vocational high schools, and area vocational schools. The states selected and the number of sites visited per state are shown in Table 1. Following the selection of the states, a project staff member contacted state vocational education officials asking support for conducting the local site visits in their states and for assistance in identifying exemplary secondary vocational education programs for special populations. States were asked to suggest programs in each of the special populations categories.

TABLE 1

STATES AND LOCAL SITES FOR SITE VISITS

States	Number of Local Sites
California	1
Colorado	3
Nebraska	2
New Hampshire	3
North Carolina	1
Ohio	5
Pennsylvania	3
Texas	3

The site visits were designed to obtain information through interviews and document-record reviews. Interviewing methods were based upon the elite (open-ended) technique developed by Dexter (1970). Within this framework, the interviewer sets the context of the interview and then allows the interviewees to respond in their own manner. During the interview each interviewee was treated in a way that emphasized the interviewee's definition of the situation, encouraged the interviewee to structure the account of the situation, and allowed the interviewees to individually introduce their own notions of what they regarded as relevant instead of relying upon the investigator's notion of relevance.

Initial contacts were made with a special populations coordinator in the state departments of education. The coordinators supplied the names of contact individuals at the local schools. A project staff member contacted the local school representative to explain the study's purposes and procedures and to obtain the school's cooperation in participating in the study. This initial contact with personnel from the local schools also provided an opportunity to identify documents and records and to ensure their availability to the study staff.

One project staff member was on site for an average of 2 days. During this time, approximately 9 - 10 interviews were

conducted in addition to the time scheduled for record and document review. Interviewees typically included vocational and special education teachers, teacher aides, vocational administrators, principals, vocational evaluators, counselors, supplemental services specialists, job placement specialists, and students. The interviews averaged 1 hour in length. Several individuals participated in second, and occasionally third, interviews. The individuals interviewed a second and third time were able to provide additional information and ensure the accuracy of information. Although interviews were scheduled to include representatives of the aforementioned groups, the project staff attempted to interview persons who seemed to possess "key information" about the characteristics of effective programs.

After each day's interviews and record and document reviews, the project staff member on site was able to begin the data analysis by initially determining emerging patterns and themes. This early organization of the data permitted the project staff to probe deeper in those areas considered to be of major significance.

Data Analysis Procedures

Patton's (1980) definition of analysis and interpretation is helpful in understanding how the information obtained from the local sites was analyzed. He writes, "there are no formal, universal rules to follow in analyzing, interpreting and evaluating qualitative data (p. 268)." "Analysis is the process of bringing order to the data, organizing what is there into patterns, categories, and basic descriptive units. Interpretation involves attaching meaning and significance to the analysis, explaining descriptive patterns, and looking for relationships and linkages among descriptive dimensions" (p. 238). The project staff identified patterns that appeared to be present in the data. Those patterns represented the perspective of the project staff members based on their understanding of the data collected. As with any data, the readers will judge these interpretations in view of their own understanding of secondary vocational education programs for special populations and the environment in which such programs operate.

The analysis of the information obtained from the local sites focused on the study objectives and the components of the study framework shown in figure 1. The transcriptions from the interviews were reviewed and analyzed by the project staff and organized according to the issues shown in exhibit 1. Reviewing the content of the conceptual framework and the themes that emerged from the data collected indicated considerable congruency of substantive content.

EXHIBIT 1

THEMATIC AREAS FOR ORGANIZING DATA

A. Elements of Quality

1. General Context
   a. School setting
   b. Classroom setting, including facilities and equipment
   c. Personnel characteristics
   d. Student characteristics
   e. Financial

2. Educational experience
   a. Preassessment
   b. Individualized education program
   c. Curriculum
   d. Instruction
   e. Support services

B. Assessing quality

1. Evaluation
   a. Program
   b. Student

The first step of analysis was the coding of the information. As the coding continued it became apparent that the initial listing of thematic areas needed to be refined. The thematic areas were combined, altered, or defined in slightly different ways to reflect the data. As project staff worked with the data, there was a continuing search for recurring regularities. These regularities merged into patterns that could be assigned to homogeneous thematic areas.

Several staff members worked on the data analysis. This provided opportunities for diversity of opinions to surface. The comparison and discussion of these differences frequently led to important insights about the characteristics of effective secondary vocational education programs for special populations. This was a time-consuming and intensive process accurately described by Patton (1980) as a process of " . . . constantly moving back and forth between the phenomenon of the program and our abstractions of that program, between the descriptions of what has occurred and our analysis of those descriptions, between complexity of reality and our simplifications of those complexities, between the circularities and inter-dependence of human activity and our need for linear, ordered statements of cause effect" (p. 268). This frequently resulted in suggestions of other possible findings and determinations of whether there were

sufficient data to support the new suggestions. In addition, the data from the interviews were verified by the checks and balances that resulted from the combination of qualitative and quantitative data.

In this study the project staff was interested in patterns and themes that emerged across all sites. This meant that careful consideration was given to the unique characteristics of each site and a determination made concerning applicability to all sites.

Mail Questionnaire

Another major data collection effort involved the use of mail questionnaires. The development of the questionnaires was heavily influenced by the information gained from the review of literature, by input from staff at the National Center who were external to the project, and by input from consultants who identified important areas for consideration.

Sampling Plan

The questionnaire was mailed to all states. Five questionnaires were sent to the states with instructions that they should be completed by the state's coordinator(s) of secondary vocational education programs for special populations.

Instrument Development

Members of the project staff used a number of activities to identify the major variables considered to be related to effective secondary vocational education programs for special populations. In phase one, four consultants (see appendix A) were asked to identify appropriate areas for consideration. For this activity, both formal and informal techniques were used. Informal techniques involved analyzing information from telephone conversations with state and local persons and from meetings dealing with vocational education programs for special populations. Formal techniques included written suggestions from the consultants and substantive analysis meetings with selected members of the National Center staff.

In phase two of the instrument development process, the questionnaire (see appendix B) was developed. The questionnaire items were written to reflect the meaning associated with each dimension and subdimension of program effectiveness and program evaluation. Project staff developed a first draft of the format and questionnaire items and submitted it to selected National Center staff members for review.

In phase three, the questionnaire was pilot tested by four staff members of the Ohio Department of Education. Following the pilot-test the questionnaire was revised and printed.

Data Collection

The first mailing of the questionnaires to respondent groups contained a cover letter, the questionnaire, and a stamped, self-addressed envelope. A project staff member carefully monitored the questionnaires returned and documented each response. Four weeks later a second mailing was sent to the nonrespondents. This mailing contained a cover letter, the questionnaire, and a stamped, self-addressed envelope. Potential respondents not returning their questionnaire received a telephone call from a project staff member urging them to return their questionnaire. Of the 255 questionnaires mailed, 81 usable responses were received. Some states did not respond, others returned one questionnaire, whereas others returned two, three, four, or five questionnaires. Responses were received from 35 states.

The 81 returned questionnaires represented a diverse set of respondents. The respondents were asked to indicate to which special populations categories they were responsible. Nineteen indicated responsibility for single parents and sex equity and 17 checked handicapped, disadvantaged, and limited English proficient. Only three respondents indicated responsibility for all special populations categories. The remaining respondents were grouped as follows: six handicapped only; six disadvantaged only; seven single parent only; seven limited English proficient only; six sex equity only; three disadvantaged and limited English proficient; four handicapped and disadvantaged; two handicapped, disadvantaged, limited English proficient, and single parents; and one handicapped, disadvantaged, limited English proficient, and sex equity.

Data Handling

The questionnaires were checked by a project staff member for inaccuracies and unrelated comments. Questionnaires were visually examined to address concerns of reliability and validity of the data. The project staff followed a number of procedures to ensure confidentiality for respondents and to ensure that no unauthorized use was made of the collected information. The information was analyzed in such a way that no individual, agency, or state could be identified.

Data Analysis

Two major problems concerning data analysis confronted the project staff. The relatively low percentage of returns and the

fact that a lack of homogeneity existed among the respondents. The lack of homogeneity centered around the fact that some states have designated coordinators for each of the areas of speciality within special populations (e.g., handicapped, disadvantaged, and so forth), whereas other states may have one coordinator for all vocational education special population programs. Only simple percentages could be obtained for the items on the questionnaire and the data had to be interpreted with extreme caution.

Summary

This study involved the use of three research approaches: (1) literature reviews, (2) local site visits, and (3) a mail questionnaire. These approaches were chosen in order to produce a rich description of happenings at the state and local level in regard to the study objectives.

CHAPTER 3

FINDINGS

This chapter presents information collected from the study sites--interviewees, document and record reviews, and observations; the mail survey of state coordinators of vocational education programs for special populations; and the review of literature regarding the key characteristics of effective secondary vocational education programs for special populations.

GENERAL CONTEXT

The general context includes formal education and a number of influences outside of the formal education structure. In this study the general context consists of the following elements: (1) community setting, (2) classroom setting, (3) personnel characteristics, (4) student characteristics, and (5) finances. These contextual elements are closely related to the inputs essential for program delivery as shown in figure 1.

It is generally accepted that vocational education has a substantial role to play in preparing individuals to be productive members of the community. A valuable source of information and support for enhancing the quality of vocational education programs for special populations is the involvement of parents and employers. The classroom setting includes the physical environment (architectural design and equipment) and the social environment. Personnel characteristics include variables such as training, experience, and attitudes that affect teaching abilities. The student characteristics include skills, aptitudes, attitudes, and the nature of the disability, or other reasons the individual is labeled a special needs student. Last, finances have a direct impact on the quality and quantity of resources made available to the program.

These variables interact to form the context of the learning environment. This study is designed to examine the presence of these factors in exemplary programs in vocational education for special populations.

Community Setting

The community setting includes involvement by parents and other community resources, especially employers. Information and support from both of these domains is considered essential to the success of secondary vocational education programs for special populations.

Parental Involvement

Several interviewees emphasized parental involvement as a key factor contributing to the success of their programs. One supervisor stated "Parents are extremely important. Without their support (programs are) not going to work." Another supervisor added, "You have to have parental involvement." A teaching assistant noted, "There must be some reinforcement in the home . . . we have to have parental support."

Although there is a general consensus concerning the need for parental involvement, getting parents involved is often difficult. One counselor stated:

> We have a lot of parents who could care less about what happens to their kid . . . . This particular section of (city) tends to have a rather apathetic parent population. Part of the problem as I see it (is that) most of the parents are just older versions of (the) kids. My retarded students--their parents are retarded. My learning disabled students--a lot of their parents are learning disabled or disadvantaged, low income, single parent, that type of thing. They are just older versions. They are not necessarily more capable than their children. Also, (they are) not interested in participating in this system. It is not comfortable for them so we don't have a lot of parent support at this end of town. (It's) a real disadvantage sometimes in that the kid has to make it on his own, you have to work harder to instill values in the kid, and you have to do it without the parents.

Parents may go beyond exhibiting apathy and actively offer resistance to the programs. The results of Valentine and Oshima's (1979) survey indicate that many special needs coordinators and local administrators felt that handicapped students are discouraged from enrolling in vocational education programs because of the parent's unwillingness to admit that the child is handicapped for fear that the child will not succeed. Parents may hold negative attitudes or experience emotional problems as a result of or independent of, caring for the special needs child. These negative attitudes represent a barrier to the effectiveness of the program. As stated by Dahl, et al. (1978), "The influence of their parents contributes much toward their becoming optimistic, energetic, striving personalities or hopeless, defeated, lethargic persons" (p. 30).

There is general consensus that it is important for parents to take positive approaches and foster positive attitudes in these children. The formation of attitudes associated with successful achievement is capsulized in these four processes.

1. High expectation relevant to capabilities

2. Abundant praise for progress

3. Occasional prodding, scolding, or even angry admonition as necessary to keep the youth on track

4. A relaxed sense of humor (Dahl, Appleby, and Lipe 1978, p. 21)

The effectiveness of the program may be determined, in part, by the extent that the program personnel can encourage these behaviors in the parent.

An effective program includes "systematic outreach to parents of students with disabilities regarding programs and services, and training available for parents" (National RRC Panel 1986, p. 1-11). Several of the interviewees touched upon this important point. Making sure that parents are aware of the programs available to them and their children is a key factor in the success of exemplary programs. One interviewee stated, "Parents often don't know how to get help. They don't know what to do." A vocational education teacher indicated a need to "get the word out to the parents that vocational education is available to the handicapped and disadvantaged so that they know it is there . . . letting the parents know that there is something available to them at no cost." A teaching assistant said that efforts are made at her location to inform parents by noting they had "sent information home to the parents advertising the type of programs that we have available." It should be noted that the majority of the sites visited now have programs designed to increase parent awareness and involvement.

Parental involvement is required by federal law (P.L. 94-142) during the development of the individualized education plan (IEP) and in regard to due process. Effective programs observed in this study went beyond this minimal requirement. It was important that parents were aware of the services available to them and their children. Also, it was crucial for parents to be encouraged to set reasonably high goals for their children, and to foster a "can do" attitude in each child.

The National RRC Panel on Indicators (1986) suggested the following criteria pertaining to parental satisfaction. The panel suggested that the program strive to satisfy parents regarding--

- the special education program, procedures, and services provided for their children, and with their children's progress;

- their level of participation and involvement;
- the way their children are treated at school by faculty, staff, and other students;
- their children's integration with nondisabled students (p. 5-6).

Community involvement. Public awareness and effective communication linkages enhance the ability of the community to serve as a support function to the program. As indicated by 94.6 percent of the administrators responding to Valentine and Oshima's (1979) survey, the success of vocational education programs for special populations is determined, in part, by local commitment to provide services. In the same survey 68.9 percent of the administrators indicated that disadvantaged and handicapped students are discouraged from enrollment due to a lack of public awareness of the student's needs and capabilities. The school district needs to "provide information that results in community awareness of the student's needs, school programs, and school accomplishments" (National RRC Panel 1986, p. 4-6). The individuals interviewed at the school sites supported community awareness programs as indicated by a counselor's desire to "focus on a bona fide education program for the public, particularly the employers."

A basic function of educating employers is to reduce misconceptions concerning the employment of handicapped or disadvantaged workers. Usual concerns are the possibility of increased insurance and accommodation costs, lowered job performance standards, attendance problems, and safety considerations. The President's Committee on Employment of the Handicapped surveyed employers and found that there is no evidence to support these concerns (Dahl et al. 1978). The need to educate employers is further recognized in Valentine's survey. Of the administrators that Valentine and Oshima surveyed, 82.6 percent agreed or strongly agreed to this statement: "Disadvantaged and handicapped students who have completed a vocational program are successfully placed in employment by educating employers to the benefits of hiring handicapped and disadvantaged individuals."

In conducting vocational education programs, employers play an important role in support services. Several interviewees indicated that the key factor in determining the success of their program is working with the employer. School personnel are routinely involved in developing contacts with business and industry. Employers become involved with vocational education programs in a variety of ways. A common form of involvement at the sites visited was through membership on advisory committees. State coordinators of secondary vocational education programs for special populations responding to the mail survey indicated that

employer membership on advisory committees is often one criterion used to evaluate community involvement in the program. Interviewees indicated that community and business leaders also support programs through donations or contributions, employment of graduates, and that they support special activities such as career days. The state vocational education special populations coordinators surveyed indicated that although employers are often involved in the evaluation of the programs, it would be desirable if this involvement occurred more frequently.

Summary

Community and parental involvement are judged to be critical to the success of vocational education programs for special populations. Parents are encouraged to take an active interest in their childrens' education and attitude development. School personnel are sensitive to the demands on parents and offered support whenever possible. Parents are well informed about the programs available to them and their children and how they could assist in the learning process. A public awareness program to facilitate support from the community and employers is recommended. It is especially important to educate employers in order to dispel the common misconceptions of employing handicapped and disadvantaged individuals.

Characteristics of effective secondary vocational education programs for special populations concerning community and parental involvement include, the following:

- o School personnel should encourage parental involvement in the program.
- o School personnel should actively and systematically provide parents with information concerning programs and services available to the parents and the students.
- o Public awareness programs should be included in school activities.
- o School personnel should educate employers in order to dispel common misconceptions about employing special populations workers.
- o School personnel should routinely be involved in developing contacts with employers.
- o Employers and other community members should hold positions on school advisory committees.

Classroom Setting and Facilities

Information is presented below about class size, social interactions, physical environment, architecture, and equipment.

Class size

The topic of class size is a much debated issue by educators and noneducators over the years. The question is whether smaller classes are better than large classes in increasing educational achievement for students, and the research on this point is less than clear. However, Cotton and Savard (1980) stated, "although a certain class size cannot be expected to lead to any particular outcome in general, the research does suggest that small classes can be beneficial in certain situations. There are indications, for example, that the achievement of disadvantaged, low-ability, special education, or primary age students is enhanced by smaller classes" (p. 4). The interviewees often expressed the belief that small classes are more effective for instruction with special population students. One supervisor stated, "The class size is very, very important because of the amount of time that must be devoted to the student." A coordinator for a special program for the disadvantaged suggested that "[success] comes where you have a small group and lots of individual attention." The main advantage to smaller class size is to facilitate individualized instruction. Potter and Igodan (1985) said, "Class size will have effect upon classroom management. The size of the class should be small enough to allow for individualized instruction whenever needed "(p. 19). A teacher's aide suggested "The classes should not be more than 15 . . . if you have a handful of learning disabled students because they get too distracted." Smaller class size allows the teacher to more effectively hold the student's attention. Site observations reveal that to maximize effectiveness the average class size should be in the 11-15 range.

Social Interactions

The concept of mainstreaming is based, in part, on the recognized need to facilitate positive social interactions between special populations and non-special populations. Due to prejudices in our society toward special populations, students with special needs are often subjected to social rejection by their peers and teachers. Rejected students are placed on a lower social status in the classrooms. Social status level appears to be related to school achievement and personal adjustment (Horne 1985, pp. 18-21). Johnston and Johnston (1980) noted that "in order for peer relationships to be constructive influences . . . they must promote feelings of belonging, acceptance,

support, and caring as opposed to feelings of rejection, abandonment, and alienation" (p. 91). It is imperative that classroom settings include positive rather than negative social interactions between the special populations students and their peers and instructors.

Physical Environment

The physical environment of the classroom and building affect the instructional program provided to the students. The facilities must be appropriate for providing services to meet the needs of students with disabilities. According to Potter and Igodan (1985), "Any school housing handicapped students must be adequate. Work benches, stalls, aisles and safety features must be installed to accommodate both handicapped and non-handicapped students . . . . Work areas should be spacious enough to carry out assigned activities both in group or individualized instruction" (p. 18). If special classrooms are needed, they should not be located in isolated areas of the school (National RRC Panel, 1986, pp. 2-9).

Architecture. An appropriate physical environment is most important for physically handicapped students. One critical aspect of the environment concerns accessibility to and from the classroom, and movement through the building. Section 502 of P.L. 93-112 requires the elimination of architectural barriers that make buildings inaccessible to handicapped individuals. Architectural modifications include ramps, wide doorways, elevators, and lowered drinking fountains, sinks, mirrors and telephones. Tindall and associates (1980) provide the following suggestions for modifying the classroom:

- Cabinets and drawers should not have protruding handles that can get in the way of a wheelchair.
- Partitions should not have feet. These can be dangerous to people who use crutches.
- Desk surfaces should be adjustable to enable students in wheelchairs to fit comfortably under them. The appropriate height for a desk is 30 inches from the floor.
- Right-handed desks should be convertible for use by a left-handed person.
- All edges and corners should be rounded.
- Work areas should be wide enough to be usable by a person in a wheelchair. The wheelchair should be able to make a 180-degree 3-point turn.

- Classrooms should be located near main walk areas for easier mobility by handicapped individuals.

- Classroom aisles should be wide enough to be used by people in wheelchairs.

- Classrooms should have a reserved spot for wheelchairs. It is a convenience and a thoughtful courtesy to handicapped students. A reserved spot should be positioned inconspicuously and fairly. (p. 347)

Equipment. A second critical aspect of the environment is the availability of the proper equipment and materials to accommodate special populations students. Assessment of these needs must be made on an individual basis in light of the specific characteristics and limitations imposed on each student. School personnel should be motivated toward broadening the options available to the students through the use of modified equipment and materials. For example, a director of bilingual education noted the need for materials written in English and in the student's native language. It has been suggested that a school counselor or resource person be assigned the responsibility of providing information to the handicapped person regarding the types of service and modified equipment and materials available (Tindall et al. 1980, p. 365). Special equipment and materials need not always be purchased, these items frequently can be manufactured at the school. Vocational programs with trade and industrial facilities have an advantage in this respect. These facilities can be utilized to custom build special tools and equipment. This important theme emerged throughout the interviews. For example, a vocational education teacher noted the efforts to accommodate a student with an artificial arm. Special gloves, fixtures and attachments were made to fit onto the arm, enabling the student to weld. Another teacher pointed out that most of the equipment needed was built in the school workshop.

Summary

The physical aspects of the classroom setting are an especially critical issue for special populations students. Smaller class sizes allow for more effective methods of instruction. Laws require that the classrooms be arranged to allow accessibility to and movement through buildings. Several suggestions are made for modifying the classroom to accommodate handicapped students. It is suggested that special equipment and materials be purchased or custom designed and manufactured at the school. School personnel at exemplary sites put forth an extra effort (e.g., constructing or adapting equipment) to accommodate the accessibility needs of handicapped individuals.

Characteristics of effective programs in vocational education for special populations concerning classroom settings include the following:

- The number of students in classes with special populations students should range from 11-15 students.
- Positive social interactions between special populations students and nonspecial populations students should be encouraged.
- All students should have easy access to and movement through the classroom.
- Assessment of equipment needs should be made on an individual basis.
- Special equipment that cannot be purchased should be custom built on the premises.
- A school staff member should be assigned the responsibility of obtaining and providing information to special populations students on the types of special equipment available.
- School personnel should put forth an extra effort to accommodate the architectural and equipment needs of the students.

Personnel Characteristics

"Obviously, in every educational situation the teacher is the critical instrument." This brief statement by one of the counselors interviewed accentuates the importance of program personnel, particularly the teacher, to the quality of the program. Interviewees described the key factors contributing to the program as dealing with some aspect of the attitudinal characteristics possessed by the personnel who work with the students. Attitudes of program personnel toward dealing with special populations and the mainstreaming concept impact significantly on attitudes held by the special populations students and by their peers. Teachers should attempt to influence peer attitudes and alleviate social rejection; these factors are critical to the effectiveness of the educational environment (Horne 1985; Weisgerber 1978).

Interviewees view several attitude-related characteristics as important. One vocational education coordinator considers it important that "people are willing to innovate, in other words, that they are willing to try different things, make mistakes, learn by the mistakes, and grow with the mistakes." A vocational

education director stated the need for "a willingness to experiment . . . bold efforts." Another interviewee noted that "instructors have come to realize that there is more than one means of achieving the same goal." The need for a willingness to experiment is also voiced in the literature. "Success comes as a result of implementing the unusual, the out of the ordinary method or technique which may motivate students and develop their learning potential" (Beckwith n.d., p. 54). A related characteristic mentioned by interviewees was flexibility--a willingness and ability to adapt and modify one's program to fit the needs of individual students. Although teachers manifest the desire to be flexible with the student, the ability to do so may be a function of environmental factors. Class size and time constraints have a direct impact on teachers' abilities to be flexible.

Those dealing with the students must be objective and nonbiased. One counselor stated, "Teachers should have no biases toward slow learners." Program personnel must enjoy working with students on an individual basis. They must be willing to set objectives separately for individual students rather than for the group as a whole. One interviewee indicated, "Instructors must realize that not all students learn by the same mode." A preassessment evaluator attributed the success of the student's vocational program in this way: "We have many instructors who are very willing to work with these students and when they realize that the student perhaps can't reach every objective that other students would, then they are willing to select objectives that they think are more appropriate for that student and really zero in on that. They are willing to accept these students and work with them."

"A special student requires patience, more time, and a little more work on your part," according to a job placement specialist. Interviewees emphasized this necessary characteristic of patience. Some experienced teachers felt that working with special needs students can be a frustrating experience, especially when working with students with learning disabilities.

Administrators and principals must necessarily hold positive attitudes toward the program and accommodating special needs students. One high school principal stated, "Administration must have a feel and empathy for these programs." Teachers generally felt that administrators must be supportive of them and allow the flexibility in programs that are necessary for innovation to occur.

Negative attitudes toward mainstreaming are often a result of teachers' opinions that they do not have the time, support services, or necessary training needed to teach special populations students (Hudson et al. 1978; Weisgerber 1978). Stephens

and Braun (1980) showed that a teacher's willingness to integrate handicapped students into the classroom is directly related to that teacher's confidence in his or her ability to teach exceptional children. The same study showed that teachers who took courses in special education were more willing to accept handicapped students than those who did not take such courses. The amount of course work in special education may have a direct influence on the teacher's level of confidence in his or her ability to teach exceptional children; the more special education training a teacher receives, the more positive his or her attitude will be toward teaching special needs students. This training may be received through formal course work or inservice programs. Harasymiv and Horne (1976) found that teachers' attitudes can be modified through inservice programs that provide information on handicapped students. Inservice programs may make teachers less anxious about working with handicapped students.

The information obtained from the on-site studies shows that most of the teachers interviewed had master's degrees related to special education. Others received training through inservice education or other programs.

Characteristics of effective secondary vocational education programs for special populations with regard to program personnel include the following:

- Staff should be willing to experiment and should be innovative in the search for the most effective methods of teaching each special populations student.
- Teachers should be positive role models and attempt to alleviate social rejection by the student's classmates.
- School personnel should be nonbiased toward special populations students.
- School personnel should enjoy working with special populations students and should be willing and able to work with students on an individual basis.
- School personnel should show patience when working with students.
- Teachers should have confidence in their abilities to work with special needs populations students.
- Administrators should have positive attitudes toward accommodating special populations students and are supportive of teachers.

- School personnel should have expertise in their subject field and additional training to work with special populations.

Student Characteristics

As indicated in the previous section, one aspect of effective programs was for vocational personnel to have a positive attitude and the willingness to modify the vocational programs to accommodate special populations. However, most interviewees indicated that to eliminate prejudgments and stereotyping of special populations in vocational programs, educators need to be more knowledgeable of the factors that affect the student's learning. A vocational coordinator stated, "Teachers have to be aware of the problems and strengths of the students. This includes knowing certain details about the student's personal and educational background." Weisgerber (1978) noted, "It is important to remember that labels, regardless of their origin, do not provide enough educational information on which to base plans for appropriate programs for handicapped students" (p. 6). Many vocational staff members repeatedly emphasized that to change biases towards working with special populations, society needs to understand the characteristics of these students.

The Federal Register (1985) states that the categories of handicapping conditions consist of mentally handicapped, learning disabled, emotionally impaired, visually handicapped, hearing impaired, speech impaired, orthopedically handicapped, multi-handicapped, and other health impairments. Beckwith (n.d.) indicated that mentally handicapped, severely training disabled, and emotionally impaired students may exhibit one or several of these characteristics.

- Immature or impulsive behavior
- Behavior that seems inconsistent with chronological age
- Short attention span
- Easily frustrated
- Disrupts classroom repeatedly
- Demands attention
- Overly sensitive to criticism
- Negative self-image
- Inability to follow written directions, but may be able to follow verbal instructions (pp. 9-10)

Interviewees did not identify student characteristics based on the different handicaps. In general, only a few handicapped students were in a vocational program at any one time. It was therefore difficult for vocational instructors to identify specific characteristics of each handicapping condition. On the other hand, special programs for the handicapped exist that contain a substantial number of students for the instructors to make generalizations about the student characteristics. Many of the characteristics indicated by Beckwith (n.d.) were also noted by the vocational instructors, special education teachers, and other staff members interviewed as overall student characteristics. Interviewees however, stated other commonly found characteristics of learning disabled, emotionally disturbed, and mentally handicapped students such as: poor reading skills, lack of communication skills, avoid new responsibilities due to overprotecting parents, and parents sometimes exhibit a handicap.

In agreement with the interviewees of the schools visited, Gemmil and Kiss (1979) identified characteristics of disadvantaged (economic and academic) learners as follows:

- o Lack of communication skills
- o Performance below grade level
- o Family income at or below the national poverty level
- o Home environment detrimental to self-growth
- o Exhibits poor health characteristics (pp. 5-6)

Gemmil and Kiss (1979, pp. 6-7) also stated these characteristics or factors affecting students' learning: poor attendance, negative attitudes toward learning, rebellion against authority, low levels of aspirations, negative self-image and lack of self-confidence, easily bored and short attention span, difficulty in coordination, and demonstration of anti-social behaviors. A coordinator of a special program for the disadvantaged indicated, "Disadvantaged students have a very low self-image and self-esteem and negative attitudes towards other students. And some of our students come from single parent homes and a low family income."

Characteristics of limited English proficient, single parents, and individuals enrolled in programs designed to eliminate sex bias and sex stereotyping are not addressed in this report due to the limited information collected on the characteristics of these special populations from the schools visited in this study.

Key characteristics of special populations students are--

- o immature behavior,
- o short attention span,
- o easily frustrated and bored,
- o negative self-image and lack of self-confidence,
- o lack of communication skills,
- o performance below grade level,
- o poor health characteristics, and
- o family income generally at or below the national poverty level.

Financial

On-site visits and the mail survey yielded minimal information on funding for secondary vocational education programs for special populations. Three questions in the state coordinator questionnaire elicited funding information. Of these questions, two received a very low response rate. One question requested the total amount of the vocational education programming budget for special populations for the past 5 years. The respondents were asked to breakdown the budget in terms of each special population group. These were further categorized into federal and state monies for a total of fifty entries. The low response rate may have been due to the amount of work required to answer this question. The second question requested the percentage of the total budget for vocational education programs for special populations allotted for (1) curriculum development, (2) equipment and materials modification, (3) program evaluation, (4) vocational assessment, (5) inservice education, and (6) other. The information needed to respond to this question may not have been easily accessible.

The question that received an adequate response rate was "How adequate do you feel your current budget is with respect to meeting the vocational education needs of special populations in your area?" Table 2 summarizes the results from this question. For each special needs population, state administrators felt, on average, that their budgets were closest to "somewhat adequate."

Nacson and Kelly (1980) conducted a study for the National Institute of Education to learn how and to what extent the vocational needs of special populations were being met across the

TABLE 2

SUMMARY OF STATE VOCATIONAL EDUCATION SPECIAL POPULATIONS COORDINATORS RESPONSES CONCERNING THE ADEQUACY OF THEIR CURRENT BUDGETS FOR MEETING THE NEEDS OF SPECIAL POPULATIONS

Type of Special Populations	Frequency				Mean	SD
	Not Adequate [1]	Somewhat Adequate [2]	Adequate [3]	Very Adequate [4]		
Handicapped	9	8	13	1	2.19	.91
Disadvantaged	11	9	11	3	2.18	1.00
Limited English Proficient	8	8	12	5	2.42	1.03
Single Parents	13	6	8	3	2.03	1.07
Sex Equity	6	11	9	3	2.31	.93

N = 81

country. One of the primary research questions addressed how resources were being used at local levels to support strategies and programs designed to serve special populations. The respondents were various staff and students at 15 sites that had vocational education programs for special populations. In terms of funding, the researchers looked primarily at the use of Vocational Education Amendment (VEA) set-aside funds from the 1976 act. The following summarizes several of the Nacson and Kelly (1980) findings:

- In almost all cases, schools target VEA resources for special projects and activities for academically disadvantaged and handicapped persons only. Few, if any, funds are used for limited English-proficient students or women.

- In terms of programs for disadvantaged students, there exists little if any coordination between VEA resources and funding from other federal or state sources.

- In terms of funding for the handicapped, VEA funds are often used in coordination with other federal and state funds.

- VEA set-aside funds for the handicapped are used as an extension of the basic grant, supporting separate vocational programs rather than supplementing services for students in mainstreaming programs. The funds are used to purchase and maintain equipment for separate shops.

- Community-based organizations receive most of their funding through programs such as CETA and generally do not consider VEA funds.

- In many cases, the VEA funds are too small to have any impact on the programs for the disadvantaged. In some instances the funds are insufficient to warrant the time and effort involved in applying for them.

- Many states can not afford the matching provision.

- The VEA requirements of matching funds do not help create new monies for the programs.

- There is considerable confusion about the meaning of excess cost

Vocational administrators at the sites visited expressed the viewpoint that funding for vocational education programs is becoming an increasing concern. Sufficient funds were necessary to keep vocational materials and equipment current and updated. Therefore, additional resources were needed for vocational programs to function successfully for each special population. Regardless of the sources of funding, it was important to receive adequate funds to meet the individual needs of the students. Based on documents reviewed from on-site visits and other states, funds are provided by one or more of the following sources: (1) federal government, (2) state and local funds, and (3) community resources. The sources of funds utilized and the distribution of money for the specific special populations category vary from state to state.

Summary

The state administrators surveyed felt, on average, that their current budgets were somewhat adequate for meeting the vocational education needs for special populations. In light of

current spending cuts, it is not surprising that the budgets are not considered to be more adequate than this. The excess cost provision has the detrimental effect of discouraging mainstreaming by providing greater financial rewards for setting up separate special programs. The ambiguity in the meaning of "excess cost" creates confusion among persons at all levels.

Characteristics of effective vocational education programs for special populations concerning funding include the following:

- Multiple sources of funds are coordinated to maximize their effective and efficient use.
- Funds should be available to maintain up-to-date equipment and materials

EDUCATIONAL EXPERIENCE

The educational experience is one of the most important aspects of the overall success of special populations enrolled in vocational education programs. In order to determine whether vocational education programs are operating effectively to provide quality education to special populations, it is essential to understand how each part of the vocational education experience functions. Thus, defining the characteristics of effectiveness in the vocational education experience in detail is a critical step.

The educational experience consists of several interrelated components. These components involve numerous professionals in carrying out the processes, including vocational educators, special populations educators, regular program educators, rehabilitation specialists, therapists, psychologists, physicians, and others. The first component involves the preassessment process that identifies the individual needs of special populations and provides information for placing the students in appropriate vocational programs. The preassessment process is used to aid the development of the individualized education program (IEP) for handicapped students (a major requirement of P.L. 94-142). The IEPs are generally written only for handicapped students, although a few schools visited use individualized education plans for other special populations such as disadvantaged or single parents. The preassessment process and the IEP provide the basis for modifying the curriculum of the vocational education programs. Next, support services are needed for the special populations and vocational instructors to ensure the success of vocational education programs. Support services are used for assistance in the development of the IEP and for curriculum modification.

Pre-assessment

In order to place and serve special population students effectively in vocational programs, it is necessary to identify and analyze their learning styles, physical and behavioral problems, and vocational abilities. Phelps and Wentling (1977) indicated that the purpose of preassessment is "to identify and assess the specific special needs of handicapped and/or disadvantaged learners prior to and during the early stages of the instructional program" (p. 27). Also, Dahl, Appleby, and Lipe (1978) noted that individual vocational assessment should constitute "a comprehensive process conducted over a period of time, involving a multidisciplinary team approach, with the purpose of identifying individual characteristics, and education, training, and placement needs, which provides educators the basis for planning an individual's program, and which provides the individual with insight into his or her vocational potential" (p. 103). The assessment process provides information important for building effective educational programs. A vocational instructor in one of the schools visited stressed that, "Vocational assessment can provide a well documented plan of action in placing a student into a program." If the students are effectively assessed, the information can be very useful in planning and developing instructional programs and supportive services.

The procedure of assessment is commonly referred to as an evaluation or diagnosis. The vocational preassessment process was generally carried out by persons frequently called vocational evaluators. In the sites visited, the vocational evaluators were responsible for assessing the vocational interests and aptitudes of new students that are identified as having special needs through counseling, special education, or rehabilitation. Scelfo and Henry (1978) define a vocational evaluator as "a professional person who is responsible for the entire vocational assessment of an individual student. This includes reviewing all referral information, orientation of the student, planning, maintaining, and coordinating the student's program, maintaining a written case file, holding formal and informal conferences as appropriate, making the termination decision, preparing the final report, and ensuring student follow-up" (p. 40). Whereas a majority of the vocational programs began in a student's junior year, most evaluators interviewed note that to increase a students' chances of success, assessment should start as early as possible. Leconte (1985) suggested, "Vocational evaluation is of greatest help when it is scheduled during the prevocational or exploration stage of vocational education programming, before specific skill development begins" (p. 41). Assessment needs to be incorporated as a part of the school's career education and guidance program, and should therefore begin as early as first grade or kindergarten. One vocational teacher's viewpoint was that "the emphasis here would then be just to make students aware of

careers and to start them thinking about how they are going to prepare for life after high school." "At the 7th grade level, for example, prevocational and social prevocational inventories would be given and used as guidelines to indicate to us where the student is [skill wise]," according to a vocational instructor. However, in most schools visited, vocational evaluators delayed the preassessment process until a student's 9th or 10th grade year, and sometimes as late as the 11th. According to a vocational evaluator, one problem is that students reach the 10th and 11th grade and have "little or no awareness of work, what it is, or how it is different from school and little or no vocational career interests." When assessment is conducted at an earlier stage, there is sufficient background information collected to do a structured and accurate vocational assessment on the students before they enter a vocational program.

The Vocational Assessment Process

Assessment usually occurs once a year as students enter into vocational programs. The process generally consists of the following: (1) the collection of background data on the students, (2) a personal interview, (3) formalized testing, (4) work samples or hands-on assessment, (5) general observations, and (6) exit interviews. According to the National RRC Panel (1986), "Effective policies and procedures ensure that a variety of evaluation methods are used to determine appropriate programming and placement including review of the student's records, observations of the student in various settings, interviews with parents and school staff, and formalized testing procedures when appropriate" (p. 1-8).

Background data. Special populations students are usually referred from the home school to a vocational assessment center or facility for assessment by the special education department, rehabilitation department, or school counselors. These departments and personnel often have background data on the students in records and reports that contain family background, medical, psychological, and educational data. The first component of the vocational preassessment process usually begins with a review of this collected background information to see what may be appropriate in the assessment and instructional planning process. A special education teacher indicated, "Sometimes a student can be perceived as nonfunctional in an academic setting but that may not necessarily be true in a vocational setting." In order for the evaluator(s) to have access to such records, there is close interaction between all personnel responsible for the special populations students and the vocational education department. This is indeed helpful to the evaluation staff for they are generally serving all high schools in the district.

The personal interview. The second component of assessment is personal interviews of the special population students. From the interviews the evaluator forms an idea of what student interests are, what careers they would like to pursue, their personal attitudes and behaviors, and any problems they may have. One vocational evaluator believed that the "students themselves can often be the best source of information because if you approach it correctly, they know what programs they have been in, what medical problems they have, and other useful information."

Formalized testing. Based on the informal student interviews and the perceptions of the evaluator(s) from the background data, the third component is of formalized vocational interest inventories and aptitude and ability tests initiated. The tests take from 1 hour to 3 weeks depending on the student and the school. Examples of some of the most commonly used assessment tools are (1) The Differential Aptitude Test (DAT), (2) The Talent Assessment Program (TAP), (3) Singer work samples, (4) Valpar work samples, (5) the Becker Reading-Free Inventory, and (6) the California Achievement Test. Self-developed interview forms and psychological tests are also used. "[Depending on the level or needs of a student] it is real important to have a variety of tests available for assessment," according to a vocational evaluator. Dahl et al. (1978) stated, "Properly used standardized tests, supplemented if needed by locally developed basic skills tests, are valuable tools in the evaluation process" (p. 114).

Hands-on assessment. The fourth component of the assessment process involves work samples and another form of hands-on assessment usually referred to as situational assessment. Situational assessment differs from work samples in that the students are actually placed in a job setting in a vocational class or in the community. One vocational counselor explained, "If you have questions about what a student really can or cannot do and maybe they show no great desire, attitude, or ability in any certain area, then we give them a chance to try a class. Situational assessment means not just dumping students into a vocational program and letting them sink or swim but giving them the chance to explore vocational areas. This also gives the staff an opportunity to look at the student closely for a short period of time."

One vocational evaluator stated, "The ideal assessment center should certainly have situational assessment available." All schools emphasized the need and importance of having hands-on assessment--work samples or situational assessment. "Paper and pencil tests or interviews do not always give an accurate reading of the students' abilities. Work samples or situational assessment are really the key to evaluation," according to one vocational evaluator. Hands-on assessment runs from 2 days to 6 weeks. For example, one school allows 6 weeks for a special

populations student to try six different vocational areas, whereas some schools spend 1 week visiting two or three vocational areas or a few days with an employer at the job site.

In most cases, it is beneficial for the evaluator(s) to have some knowledge of the type of work involved in the vocational programs offered in their school district. A vocational evaluator stated, "By knowing such factors as what kinds of curriculum materials are being used, teaching styles of instructors, equipment available in the classrooms, one could then have a better idea as to whether the student can function effectively in a selected vocational program." Other vocational educators interviewed expressed this view. If the student is placed, the evaluator(s) know what type of supportive services are needed for that student's success. There were a few instances where the vocational evaluator would learn all the vocational skills so they would have a better feel for what is to be expected of the student. The vocational evaluator or some other designated staff member (i.e., "work adjustment specialist") then spends time with the student in the selected vocational classes or on the job setting.

General observations. The next component of the assessment process is for the evaluator(s) to observe students throughout the entire process. Most evaluators express agreement with this statement: "The student's attitudes, social behavior, motivation, ability to start a task, the supervision the student needs, how much explanation the student needs, and his or her personal appearance are important factors to note."

Exit interview. In most schools, the final component of the preassessment process is to present the information collected to all persons responsible for that particular special population student. This information is presented in an exit interview. According to one evaluator, "An exit interview is where the student, special education teachers, parents, vocational counselors, school psychologist, therapists, and all interested parties get together with the evaluator, who then disseminates the gathered information to reach some sort of consensus or agreement about the vocational goal [for the student]."

Summary

The literature review supports the views expressed by those persons interviewed that accurate vocational assessment is a key indicator of an effective program for all special populations. Preassessment provides data on students' personal and educational background, their personal attitudes and behaviors, and informal formal testing of their interests and abilities that enables educators to plan individual instructional programs and determine the services needed. In addition, this information was used by the schools to determine the vocational goals when they are to be

included in the individualized education plans (IEPs) for handicapped students.

The characteristics of secondary vocational education programs for special populations with regard to preassessment are these:

- Identification of learning styles, physical and behavior problems, and vocational interests and abilities should begin early in the student's educational program as possible, particularly before the student enters high school or a vocational program.

- Preassessment should be included as a part of career education or career exploration programs.

- Vocational evaluators should conduct the preassessment and should prepare the recommendations for all interested parties.

- A variety of assessment tools and methods are used during the preassessment process including background data (to obtain student's family background, medical information, and educational performance); personal interviews (to obtain information on the student's interests, attitudes, and behaviors); formalized testing (documented data on student's basic skills and vocational aptitudes and abilities); hands-on assessment (student experiences the type of work involved in the vocational program); and preassessment exit interviews (information is distributed to all interested parties).

The Individual Education Plan (IEP)

The Education for All Handicapped Children Act of 1975 (P.L. 94-142) requires that an individualized education program (IEP) be developed and put into writing for each handicapped student. Also, the Perkins Act states, "Vocational education programs and activities for handicapped individuals will be provided in the least restrictive environment in accordance with section 612(5)(B) of the Education of Handicapped Act and will, whenever appropriate, be included as a component of the individualized education plan." Although not required by law, IEPs were sometimes developed for other special populations. According to one vocational instructor, "The IEPs are helpful at the beginning of the vocational program because they give detailed information on new students." The individual plan specifies students' present performance levels, the educational goals, instructional objectives, support services to be provided, and evaluation procedures. A special populations coordinator emphasized, "The IEP

has become more than just a legal document, it is a plan. The plan shows the need for the total 4 year planning process that will lead to either postsecondary education or transitional employment."

Developing the IEP

P.L. 94-142 requires the IEP to be a written statement for each handicapped student and developed in a meeting by a qualified representative of the local education agency, the teacher, the parents or guardians, and, whenever appropriate, the student. However, at most sites visited, the development of the IEP's involved a broader range of professionals. As with the assessment process, a meeting is conducted with the student, parents, special education teachers, vocational counselors, and other professionals as needed.

At most schools, staff members of the vocational education department were responsible for preparing the vocational component of the IEP, although it is not required by law. This appears to be a very significant factor in order for the vocational component of the IEP to work successfully for the handicapped student. A vocational evaluator stated, "Often the persons preparing the IEP have little or no knowledge of the vocational courses and therefore the program is too academically based." As shown in figure 3, over one-third of the state special populations coordinators indicate that the IEP's are not serving their intended purpose. In exhibit 2, state vocational education special populations coordinators responding to the mail questionnaire noted suggestions for improving the IEP's. A view often expressed was that the IEPs are serving their intended purpose; however, the vocational component is often excluded, outdated, or very generic. As stated by one state vocational education coordinator, "No vocational education is being written on the IEPs and if so, it is so generic it does no good--vocational teachers need to be more involved." A local vocational administrator indicated the importance of involving vocational staff in that "the vocational personnel can specify what support services will be needed, what modifications should be made, and what courses the student may need at the home school. Most of this information has already been collected during the vocational assessment."

Implementation and Evaluation of the IEP

In most instances, once the IEP is developed, it is the responsibility of the special education teacher to monitor the progress of the student. At several sites, the special education teacher is generally responsible for working with the student and the vocational teacher in monitoring student progress on the IEP

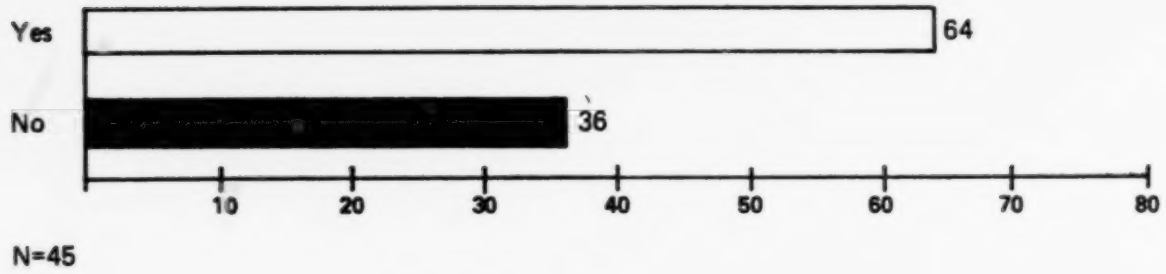


Figure 3. Percentage of state populations coordinators indicating that individualized education plans are serving their intended purpose.

EXHIBIT 2

STATE VOCATIONAL EDUCATION SPECIAL POPULATIONS COORDINATORS' SUGGESTIONS FOR IMPROVING THE INDIVIDUALIZED EDUCATION PLAN

More emphasis is needed on the occupational advancement of the individual.

IEPs are outdated and serve no real function in vocational education. They must be updated yearly and vocational goals must be specific and clear.

Vocational goals and objectives should be included in the IEP's.

There should be more coordination between vocational education and special education in writing the goals and objectives for a comprehensive vocational component.

Vocational education is not always written in the IEP, and if it is, it is so generic that it is useless. Vocational education teachers need to be more involved. Certified personnel in special education should be used to help develop IEPs.

When planning efforts in developing the IEP are done appropriately, they work. Too often these efforts are considered extra paperwork and therefore not effective.

IEPs are not successful when teachers feel threatened by involving students and their parents in long-range planning. Teachers must be willing to involve students and parents.

More attention should be placed on the linguistic aspects of the course; in general, on language arts (i.e. reading, writing).

objectives and goals. At the beginning of the vocational program, the vocational instructor or special education teacher explains to the students what they are expected to accomplish. One vocational instructor felt that "students understand more about what is to be expected of them when it is written in black and white." An interview is conducted at the end of the year between the special education teacher and the student and vocational teacher to determine what objectives were achieved.

Summary

The individual education plan is intended to enable handicapped students to receive education of quality equal to that of the nonhandicapped population. The law requires that special education and other education agencies, in particular vocational education, work closely to ensure the goal is achieved. Many schools noted that this interaction is a key factor in providing quality education to the handicapped. At most sites, the interviewees emphasized the importance of providing vocational skills for the handicapped so they can live independently and prepare for the transition into the work world. State coordinators and local education personnel agreed that by involving vocational education staff in the development, implementation, and evaluation of the IEP, vocational education can better meet the individual needs of these students.

The characteristics of effective secondary vocational education programs for special populations with regard to the individual education plan are as follows:

- All persons responsible for handicapped students should be involved in the development of the individualized education plans (e.g., parents, vocational counselors, special education teachers, vocational teachers).

- The staff of the vocational education department should be included in the preparation of the vocational component of the individualized education plan, particularly the instructors who will be working with the handicapped student.

- Coordination should occur between the special education and the vocational education instructors in implementing the objectives stated in the individualized education plan and in evaluating the extent to which the goals are achieved.

Modifying Curriculum

After determining the abilities, interests, and educational goals of the special populations students, the next step, according to most interviewees, often is to modify the vocational education curriculum to allow for these students to be mainstreamed into regular vocational education programs. The literature review indicated that by using curricula modified to the individual needs of each student, special populations receive equal educational opportunities. According to the National RRC Panel (1986):

> The primary aims of an instructional program are to add to students' knowledge, to enable them to develop and apply skills, and to foster the development of certain attitudes, understandings, values, and appreciations. To accomplish these aims, school curricula by their nature must be comprehensive and provide a continuum of options and services that meet the needs, abilities, and interests of all students in a range of content areas. It is important that the instructional program for students with disabilities be appropriately derived from regular education curricula, and ensure equal educational opportunities within the least restrictive environments. (p. 5-2)

In the sites studied, curriculum was modified for handicapped students as a result of the development of the IEP, which outlined the curriculum based on individual student needs. For the other special populations, curriculum was frequently modified according to their individual needs that were determined through the vocational assessment process. Dahl, Appleby, and Lipe (1978) stated, "Modifications should be made only to the extent that it permits the student to engage in a meaningful and productive learning experience. Whenever possible, regular tools, equipment and materials should be used" (p. 140). For all special populations, one counselor agreed, "I would recommend that they [special populations students] go through basically the same program with modifications as would be needed. Certainly with the Perkins Act there is money available for modifications of equipment and materials."

In many schools visited, modifying the curriculum was the responsibility of the vocational instructors. However, vocational instructors sometimes lack experience in curriculum modification. Therefore, special education teachers, special populations coordinators, and some administrators often carry equal responsibility in performing this task. In some instances, members of advisory committees are involved in the curriculum modification process. As noted earlier with preassessment, there is a strong need for vocational teachers to work closely with special education staff members and others involved with special

populations. These relationships help eliminate the barriers and fears held by vocational instructors who have no experience working with special populations. One special education teacher indicated, "The problem with modifying the curriculum is getting the instructors to realize that not all students learn by the mode." A director of career education stated, "It was very important to involve teachers whenever possible so they are aware of what is going on and what is to be expected of them. Teachers are more apt to provide step-by-step guidelines for the students."

Members of advisory committees, employers in particular, were included in the curriculum modification process to ensure that the curriculum provided students with the current skills needed for job placement. Advisory committee members also provide information on activities in the community that should be included in the curriculum. In some instances, for single parent and sex equity programs, attorneys review controversial issues and instructional materials with the parents and students. A special populations coordinator noted, "The key or focus is modifying the curriculum to the degree where special populations develop a skill to be employable. For example, an auto mechanics curriculum has to be developed for a student who reads at the second or third grade level but still needs to learn to perform various tasks."

At most of the sites, curriculum modification to achieve each student's personal and educational goals include three basic areas: (1) instructional content, (2) instructional practices, and (3) instructional materials. One important factor of an effective program emphasized throughout the schools is to have a very flexible curriculum and staff. The curriculum must take into account each individual's learning style and the staff must adjust accordingly. One vocational instructor noted, "The curriculum outline should be there but be adjustable. Teachers have to be extremely sensitive to the fact that they serve a multitude of populations."

Instructional Content

Vocational instructors, special education teachers, special populations coordinators, job placement specialists, and others agreed that instructional content should include the following subject areas to ensure that special populations students achieve their potential abilities and individual goals:

- Positive attitudes toward self (self-esteem)
- Basic skills--reading, writing, mathematics, and oral communication

- Work attitudes and behaviors
- Job seeking skills
- Independent living skills
- Prevocational and vocational skills

The subject areas to be included in the curriculum varied for each special population category. These subject areas and others were identified in the study by the National RRC panel (1986) as indicators of effective curriculum.

Self-esteem. Building the students' self-esteem was noted by vocational staff members and special education teachers as a very important element of the curriculum. Most special populations experience a series of disappointments throughout their educational careers. Society, family, friends, and educators all influence the negative self-image of these students. Interviewees believed that vocational education can provide the student with successes that will eventually build their self-esteem. One vocational supervisor said, "I think individual counseling and a lot of social support helps. For example, you can improve self-esteem if you can improve the relationship in a family." A special populations coordinator indicated, "One of the biggest things we do for the students here is build their self-esteem. That creates a tremendous amount of success in someone who has had a history of frustrations and failures; building their self-esteem suddenly provides the desire to achieve." Many staff persons agreed with this notion as did one vocational instructor who said, "By the time they get to high school, most students feel like failures, therefore, you must adjust your curriculum so that it will provide for some success in the vocational program."

Basic skills. Basic skills were indeed a problem for special populations, specifically handicapped and disadvantaged students. Interviewees consistently indicated that reading, writing, oral communication, computational, and problem-solving skills were in most need of strengthening. Corthell and Van Boskirk (1984) quoting from the Youth Task Force Public Hearings, National Commission for Employment Policy, 1979, indicated, "Employers of youths have emphasized the importance of vocational skills in reading, writing, and computation" (p. 3).

There is, however, some controversy as to what degree vocational education should be responsible for reinforcing basic skills. A few argue against teaching basic skills as a part of the curriculum. One vocational instructor interviewed stated, "Support services can provide the necessary reinforcement, but vocational education should not have the major responsibility of actually teaching the skill." Most interviewees believe that

vocational educators can spend too much time trying to improve basic skills. For example, a vocational evaluator explained that a student at the high school level with a severe reading problem needs intensive reinforcement. On the other hand, most vocational staff interviewed indicated it is essential to strengthen basic skills in vocational curriculum. Some vocational staff felt that basic skills could be incorporated into the curriculum by relating them to the environment. As a vocational instructor indicated, "I feel that basic skills needed are to relate specifically to the world of work. For example, students need to develop math skills that enable them to maintain a checking account or to give correct change." One special populations coordinator emphasized the necessity to build basic skills, but noted, "You have to go very slow on pushing academics because they have not succeeded there before, and if you try to give them too much [vocational training and academics] you lose them. It has to be a gradual process."

Work attitudes and behaviors. Most vocational staff members interviewed frequently emphasized that for students to survive in the world of work it takes more than having specific job skills; they must develop good work attitudes and behaviors. A vocational instructor indicated, "The appropriate work behaviors include such factors as punctuality, dependability, interpersonal skills, and personal appearance." These factors are also noted by Dahl, Appleby, and Lipe (1978) as appropriate work habits for all jobs. Dahl, Appleby, and Lipe indicated that "Vocational courses and work-study programs typically teach appropriate on-the-job behavior as part of the regular curriculum, and instruction that suffices for non-handicapped students will frequently be adequate to instruct handicapped students as well" (p. 247).

According to the interviewees in several schools, employers express the need to develop the students' work attitude and behaviors. The employers are willing to accept some students who lacked specific job skills as long as they have good work habits. Often students are hired because of their skills; however, many did not remain on the job due to undesirable attitudes and behaviors. A special education teacher said, "In this kind of [handicapped] program we look at developing good job attitudes based on conversations with various employers who are hiring the students. They tell us to send them the kids that have good job attitudes and we'll give them the skill." A vocational evaluator stated, "More people get fired because of attitude and behavior than they do because of lack of skill. We have heard that from employers over and over again." Based on the Vice President's Task Force on Youth Employment, 1980, cited by Corthell and Van Boskirk (1984), "Specific vocational skill training is not viewed as being as critical to long term employability of youths as are positive work habits and sound basic interpersonal skills and work skills" (p. 3).

Job seeking skills. Once the students have developed their self-esteem, good work habits, prevocational and vocational skills, and increased their basic skills, they will be ready for the work force. However, most special populations students lack the knowledge required for pursuing a job. Dahl, Appleby, and Lipe (1978) noted, "Often, handicapped people fail to obtain or hold jobs not because they lack the required job skills, but because they are ineffective job seekers, do not know how to conduct themselves on the job or fail in some other way to do things expected of work force members" (pp. 243-244). Many schools visited included job seeking skills as part of the curriculum. Specific courses on job seeking techniques are offered to students in their senior year. Job seeking skills include how to find a job, filling out job applications, preparing resumes, and interviewing. In addition, Dahl, Appleby, and Lipe (1978) noted a mainstreaming program that recommended the following areas to include in teaching the handicapped job-seeking skills:

- How and where to look for work
- How to complete an application blank and/or resume
- How to act effectively in an interview
- How to find out what the company does, the kind of jobs they have, and what kind of people they hire
- How to be neat and clean and wear clothes appropriate to type of job being sought
- How to present as much positive information as possible during initial portion of interview
- How to answer questions about his ability, job history, institutionalization, etc. should be brief and stated in a way that relieves the employer's concern (pp. 244-245).

One supplemental service specialist expressed this prevailing viewpoint, "I think our job is to really train the students in the skills that they need [hands-on skills] and to train them for job interviews . . . knowing how to be and act appropriately in any job situation."

Independent living skills. Many vocational staff persons and others interviewed expressed a concern about transition from school to work or postsecondary education for special populations, particularly for the handicapped and disadvantaged. The report by Corthell and Van Boskirk (1984) cited, "Among these issues are the considerations of independent living and assumption of all responsibilities associated with adulthood . . .

these nonvocational activities are intertwined within the transition process" (p. 1). Most schools visited provide instruction for independent living skills. Most vocational education personnel felt this is important to include because most special populations students are capable of living normal lives within this society, however they often lack experience in handling responsibilities. Staff at one school indicated that the following daily living competencies published by The Council for Exceptional Children (Life Central Career Education 1983) were essential to the curriculum: managing family finances; selecting, managing, and maintaining a home; caring for personal needs; raising children and enriching family living; buying and preparing food; transportation; buying and caring for clothing; engaging in civic activities; and recreation and leisure.

Pre-vocational. Prevocational training allows special populations students to learn and develop general work ethics and work skills and was therefore considered a necessary content area of the curriculum. Most of the students were unaware of what jobs entail and the various jobs that are available. Prevocational programs provided an opportunity to explore many areas where the student could find success. A liaison teacher noted, "I think the more prevocational areas that you can expose a student to, the more likely you are to find an area that the student can succeed or excel in." According to one counselor, "Prevocational training is especially important for handicapped students . . . with these kids you are not always looking for specific job skills training as much as you are developing a well-rounded person." This view was expressed by several special education teachers and vocational staff for the academically disadvantaged as well as the handicapped. Prevocational training for the other special populations provides entrance into specific vocational areas. These students often have the ability to develop specific job skills; however, other factors prevent the success of their vocational training.

Vocational skills. Some special populations students, by their junior and senior years, have decided on a career in a vocational area that takes them into postsecondary education or the work force. Some of these students (i.e., single parents, disadvantaged) need to work after high school and could thereby benefit from obtaining vocational skills that ease the transition from school to work. In relation to special populations, the goal or purpose of vocational training is to provide the students with skills that make them self-sufficient and productive members of society. A vocational counselor stated, "I think our role in vocational education is to prepare the special populations student to enter adult life in a career that is going to be satisfying to him or her . . . they are going to be able to earn a good living and be a contributing member of society."

The local vocational education administrators interviewed believed that each program should provide students with the necessary competencies to enter the labor market with the knowledge and skills to be employed in a specific occupation or in a mixture of jobs for which they were prepared. One vocational instructor indicated, "We are preparing special populations for a variety of entry-level jobs. They are not all going to be directors of day care centers or run their own programs. Therefore, we are preparing them for different levels of jobs within child care." According to Greenan (1982), "Vocational education program alternatives for students are numerous and diverse. Skill training programs such as carpentry, food preparation, typing, landscaping, and practical nursing are designed to provide students with marketable and saleable entry-level skills for gainful employment" (p. 231).

Instructional Practices

The vocational educators at most schools visited recognized that traditional methods of teaching special populations were not always successful. Each student has his or her own mode of learning, and therefore, the instructors must be open to unique and creative teaching methods and strategies. Beckwith (n.d.) stated, "Experiences of teachers who have been successful in reaching these students do show that success comes as a result of implementing the unusual, the out-of-the-ordinary method or technique which may motivate students and develop their learning potential" (p. 54). The National RRC Panel noted, "Teachers continually diagnose academic needs and prescribe appropriate educational activities for each student, considering learning styles and rates of learning. Teachers use a variety of alternative instructional approaches appropriate to the varied developmental levels, learning styles, and current levels of performance of students" (p. 5-14). The instructional strategies indicated by most of the vocational instructors and special education teachers as effective for special populations students to reinforce basic skills (academics) were these:

- Give oral tests in place of written tests.
- Use flash cards for vocabulary development.
- Provide computers with illustrations for reading and math.
- Use calculators for math problems.
- Offer separate courses that emphasize basic skills needed in a related vocational area.

- o Provide a specialist in the basic skills area to give individual assistance to the student (i.e., reading coordinator, math coordinator).

- o Develop new material written at the reading level of students.

Based on the respondents to the mail survey of state special populations coordinators and the local personnel interviewed, the overall effective teaching methods and strategies used for special populations are presented in Table 3. These techniques were identified as being effective based on their ideas, experiences, and previous research in working with special populations. Practices were grouped according to the varying needs of the students.

Individualized instruction. Teachers indicated that one-to-one instruction is a highly effective teaching method and is used

TABLE 3

STATE VOCATIONAL EDUCATION SPECIAL POPULATIONS COORDINATORS AND LOCAL SCHOOL INTERVIEWEE INDICATIONS OF COMMONLY USED TEACHING METHODS AND STRATEGIES FOR SPECIAL POPULATIONS

Effective Teaching Methods and Strategies	Special Populations*
Individualized Instruction	H, D, LEP, SP, SE
Competency-based Instruction	H, D, LEP, SP
Simulated on-the-job Training	H, D, LEP, SP, SE
Work/study	H, D, LEP, SP
Computer Aided Instruction	H, D, LEP
Team Teaching	H, D
Peer Tutoring	H, D, LEP, SP
Small Group Instruction	H, D, SP
Audio-Visual Aids	H, D
Role Playing	H, D, SP
Role Models, Field Trips and Workshops	D, SE

* H-Handicapped, D-Disadvantaged, LEP-Limited English Proficient, SP-Single Parents, SE-Sex Equity Program

quite often for the special population students. Individualized instruction permits the vocational instructor or aide to address the needs of the student as soon as they arise. However, there is limited time available for this method; therefore, the teachers frequently require outside assistance from support services. With this method of instruction, the teacher gears the lessons and assignments based on the individual student. Although the same subject areas are covered for all students, the materials are presented in ways that special population students are capable of learning the information. For example, single parent students would sometimes miss a short period of time from school, which caused them to fall behind the other students. Individualized instruction gives them the opportunity to receive the same material as the other students, but allows them to move through the materials at their convenience.

Individualized instruction provided students with the personal attention needed towards their educational problems. The pace or mode of instruction is directed to the students realm of learning. Teachers believed that one-to-one instruction also eliminates many fears of students to express their difficulties in front of the entire class. One vocational instructor stated, "We seem to get much better results when there is not so much peer pressure because students are ashamed whenever they are unable to respond to questions and tend to laugh off the situation as a big joke when in reality they just don't understand."

Competency based instruction. Vocational teachers, special education, and other staff indicated that competency-based instruction is an effective method in that it permits the students to experience successes in vocational education rather than failures. The students are given short-term tasks or projects to complete that give them an opportunity to learn and develop one skill and then move on to another. It is a step-by-step process whereby the students are rated and rewarded according to their accomplishments from task to task. For example, an interviewee indicated, "A handicapped student in a home economics program may never develop all the skills necessary to become head chef or the restaurant owner, however, he or she could become a waitress or cashier." A vocational administrator indicated that with competency-based instruction, the students receive a certificate at the end of their vocational program stating the specific competencies of that student.

One job placement coordinator believed, "With competency-based instruction, the students could learn at their own rate and have many rewards to go along with it." The tasks and learning objectives are consistent with the abilities and interests determined through the preassessment process, which eliminated some fears of failure demonstrated by special populations students. This method allows the students to compete against one another because the students are given assignments that they are capable of finishing. Given that most students are working on different projects at different levels, no one student was singled-out as

special. As stated by Dahl, Appleby, and Lipe (1978) "This feature readily accommodates the handicapped with the non-handicapped; students in a single class typically engage in a wide variety of activities, and one student is not singled out as unusual if he or she is working on something different from what others are working on" (p. 146).

Simulated on-the-job training. Most vocational personnel indicated that simulated on-the-job training was an effective strategy for teaching special populations. The students are able to apply the theory learned in the classroom and put it to practical use. The National RRC panel (1986) noted, "Students are given practice activities that emphasize applications of learned skills or concepts in daily living situations to make learning meaningful" (p. 5-16).

Many special populations students cannot learn by reading a book or listening, therefore, they need to actually perform the task. The vocational staff and other professionals emphasized the need for these students to have hands-on experiences. One sex equity coordinator, when asked to provide effective teaching strategies, stated "I get some kind of activity where the students are going to do something with their hands and have an actual experience that appears to provide a most lasting effect." Tindall, et al. (1980) noted, "Tactile learners will learn best by doing. Provide hands-on activities in the classroom and laboratory. Arrange for the tactile learner to get involved in hands-on experiences . . . provide work experience or simulated work experience" (p. 104).

Work/study. Providing opportunities for special populations students to become involved with work-study is highly emphasized by vocational instructors, job placement specialists, and special populations coordinators as an effective instructional practice. As stated previously by Dahl, Appleby, and Lipe (1978), work-study programs are effective for teaching appropriate work attitudes and behaviors. Work-study is also a way of providing hands-on experiences, only it involves community-based organizations instead of classrooms or laboratories. One vocational instructor said, "It provides an excellent opportunity to reinforce what you have been trying to teach them."

Some vocational instructors indicated that the students enjoy work-study because they are placed in a job related to their training, receive extra credit, have time away from the school and classroom, and receive a paycheck. As one coordinator stated, "I really find that having students work has been a very successful thing. Well, it keeps a lot of them in school. Sometimes the students only come to school half a day and work half a day, that makes school much more acceptable." In agreement, another vocational instructor remarked, "Some of the students have a difficult time coping with a full day of school. I would rather be able to maintain those students in school by having them in a job situation that is going to give them a different type of learning

experience. I feel real strongly that kids learn a lot of things out of school and if we can use the community to help foster that learning, then let's take every advantage of it." Many of the schools taking part in work-study granted all high school students the opportunity to receive credit towards graduation from work experiences in the community (paid employment or on a voluntary basis). This could be during school hours, on weekends, or on their own time. A few schools that provide special projects or programs of vocational training and work experiences for special populations students. The programs are generally not available until the student's junior or senior year.

Several vocational staff persons and other professionals interviewed believed it was necessary to hire a full-time coordinator or job placement specialist to be responsible for locating the jobs for these students and to act as a liaison between the employers and students. Often vocational instructors are responsible for locating jobs, however, they have very limited time available for this task. Job placement specialists have more time available to seek out jobs most appropriate for the students. One job placement specialist said, "The coordinator can explain their limitations and strengths to the employers and provide suggestions as far as the training process." The coordinators also could spend a great deal of time working with the student once placed on the job. They enhance the student's training by matching up what they are learning in theory during school to the practical aspects in the environment. "We meet with the students to show them where their employers think they can excel, where there is room for improvement, and what can be done as a collaborative effort to improve their school work or job skills," stated one coordinator.

Computer assisted instruction. Studies have shown that computer-assisted instruction (CAI) used correctly provides effective instructional support to special populations. In agreement, vocational instructors and special populations coordinators indicated that computer-assisted instruction is an exciting and effective instructional method for the students. Interviewees expressed the belief that CAI functions as a tutor to special population students. The students are able to work on the computers their free time. The computer serves as a reinforcement technique of the lessons presented in class. This teaching strategy helps keep teachers from spending a lot of time repeating subjects for those students who generally take longer to understand. One special populations coordinator indicated that computer-assisted instruction is particularly useful in reinforcing skills in reading and mathematics.

Computer-assisted instruction is a method of learning that many of the students enjoy taking advantage of, according to several vocational instructors and special populations coordinators. One vocational instructor emphasized, "CAI allows the students to spend hours and hours working on whatever area they need assistance with. This seems to increase their motivation and

interest by just using the computer." According to Gugerty (1984), "An evaluation study utilizing the Designated Vocational Instruction (DVI) revealed that overall, the students using CAI programs at Franklin High School have displayed improved performance and high levels of motivation. Although the focus of CAI programs used is drill, practice, and self-study, it is apparent that students feel the need for this type of instruction, and improvements in their observed levels of performance bear out this contention" (p. 24).

Team teaching. Special education teachers and vocational instructors believed that team teaching brought about positive results, particularly for handicapped and disadvantaged students. This method generally consists of two instructors teaching one class. Both are given the same authority and equal duties; however, different topics and methods of instruction are used by each. The teachers have a designated block of time for coordinating activities and providing instruction.

Team teaching provides the instructors the time to observe students and to have the flexibility to work with the handicapped and disadvantaged students without pointing them out from the rest of the class. A vocational instructor stated, "Having a special education teacher or another vocational instructor with experience in dealing with handicapped students provides a more effective learning environment for the student."

Peer teaching. For most special populations, peer teaching was considered by many vocational instructors and special education teachers as a method that enhanced their social and interpersonal skills and raised levels of self-confidence. One vocational instructor believed, "It was important for other students to know that special population students are worthwhile, and once they were recognized by their peers the students gained a lot more respect."

Two approaches to peer teaching are used by vocational instructors. The first approach requires the students to take the role of instructor for the day. The students were responsible for preparing the lesson and presenting it to the other students, either in small groups or to the class. The teacher's only function as an observer and evaluator is to give feedback to each student. This is also a reinforcement technique for the student's work behaviors and attitudes. The second approach is to have students with similar backgrounds (i.e., a higher level disadvantaged student working with a lower level disadvantaged student) work in pairs on their lessons. Students are usually proud to assist another student on tasks. This provides another meaningful way of encouraging positive attitudes toward themselves.

Small group instruction. Although individualized instruction is most often preferred by vocational instructors, small group instruction was considered a key method of instruction as well.

An instructor provides assignments and tasks to the entire class, however, students work on the lessons in small groups. This presents competitiveness between groups rather than between individuals that prevents special populations from being recognized by classmates as different. Phelps (1985) noted, "Small group, cooperative learning activities are especially effective methods for teaching special students in regular classrooms, particularly when the activities involve group rewards for team member achievement" (p. 25).

Also, small group instruction is believed to be effective for the handicapped, the disadvantaged, the limited English proficient and single parents by interviewees because it gives students an opportunity to interact and share their knowledge, skills, attitudes, and emotions. For example, a vocational instructor stated, "Single parents often enjoy working together so that they could share common frustrations, problems, and solutions of their everyday lives; they then began to increase their self-confidence and would do better work."

Audio-visual aids. Many vocational instructors, special education teachers, and special needs coordinators indicated that handicapped and disadvantaged students, in many cases, are more able to retain information if they visualized or listened to the material repeatedly. Vocational instructors agreed with one instructor who said, "The use of audiovisuals such as videotapes were effective teaching methods because they (handicapped individuals) seem to learn better by watching television than by presentations. Videotapes are often prepared for review of the material or for the opportunity for students to repeat their lessons. Audiocassettes are developed of modified readings of text materials for students with low reading levels. Beckwith (n.d.) noted these teaching methods for disadvantaged students:

- Videotape class-written and produced plays about employment situations or situations chosen by the students.
- Show videotapes of TV shows or other programs with no sound. Encourage students to make up dialogue to go with the action.
- Tape record or video tape conversations with teacher and student or student and student in mock employment or social situations. (p. 54)

Role-playing. According to the National RRC Panel (1986), "Teaching and learning activities involve all available senses - visual, hearing, moving, and touching" (p. 5-15). Vocational staff indicated that role-playing is an effective teaching strategy that utilized all available senses. This method is considered to be very effective for handicapped, disadvantaged, and single parent students. Beckwith (n.d.) cited role-playing as one of the workable strategies on how to adapt the regular school

program to meet the needs of the disadvantaged (p. 54). Role-playing is excellent for encouraging job seeking skills according to many special education teachers. Special education teachers stated that role-playing is used to enhance student's affective skills as well as cognitive skills.

Role models, field trips, and workshops. Special populations, according to most interviewees for this study, need strategies that motivate them to learn the material and complete the vocational program. Role models, field trips, and workshops are strategies commonly used by the vocational personnel interviewed, particularly for the disadvantaged and students enrolled in programs designed to eliminate sex bias and sex stereotyping. The role models used typically are successfully employed individuals and had similar backgrounds to the students they were addressing. Field trips were taken to job sites in the areas and workshops were arranged with organizations to provide extensive information on career choices. In agreement with these strategies, a special education/vocational teacher states, "by taking students into the workplace and exposing them to jobs in the labor market and by bringing in guest speakers, you can increase the likelihood of their success.

Instructional Materials

Once the instructional content and objectives are determined and unique teaching methods and strategies are established, the next step is to select or develop instructional materials to support effective vocational education programs. Anderson, Green, and Odle (1978) indicated, "To assist the student in mastering these objectives, basic strategies or methods are devised . . . not until this point is the teacher prepared to locate appropriate instructional materials. The choice of instructional materials is, therefore, governed by the outcomes of three prior diagnostic prescriptive tasks: defined learner needs, established objectives, and designed teaching approaches" (p. 85). Providing the appropriate instructional materials for special populations students is an important area of curriculum modification, however, very few materials used or developed were identified by interviewees of this study. Most vocational personnel indicated that commercially developed instructional materials are seldom used. One vocational teacher said, "Commercially developed materials are used as supplemental materials." With the exception of materials for sex equity programs, the instructional materials are developed by the local school district or by individual programs or classes. One director of a sex equity program noted that good and useful materials are available, however, the materials still need to be integrated into other curriculum materials used in regular vocational classroom instruction. A vocational administrator further emphasized this point saying, "You need to incorporate the educational materials developed for special needs students into the regular curriculum so that it addresses all the needs for all the students in a vocational classroom."

Dahl, Appleby, and Lipe (1978) states, "Many educators, not having access to well-developed systems for selecting and evaluating instructional materials, devise their own selection and evaluation processes at the classroom or building level" (p. 156). Vocational personnel felt that by developing their own materials, teachers can direct the materials to a specific student or group. A special education teacher noted, "Curriculum materials for special populations can be a hit or miss situation, but to meet the individual needs of students, it is better when you are able to develop your own curriculum." Sometimes the materials may be useful but they are not adapted to the specific group. For example a vocational instructor noted that for handicapped and disadvantaged students, "the textbooks are updated and current but they are just written above their reading levels. Therefore, it is very difficult to find a textbook that I can use." On the other hand, materials providing hands on experience were often cited by the interviewees as effective resources supporting instruction for all special populations.

Summary

Curriculum modification for special populations means providing a very flexible program and learning environment that satisfies the needs of individual students. The modification process generally begins with the assessment of individual needs that are determined through the vocational assessment process. Curriculum modifications often include instructional content, instructional practices, and instructional materials. The instructional content covers such subject areas as self-esteem, basic skills, work attitudes and behaviors, job seeking skills, independent living skills, prevocational and vocational skills. Modification means developing creative and innovative instructional practices for special populations. And finally, it provides appropriate instructional materials developed to meet the needs of individuals or specific special populations.

Characteristics pertaining to modifying curriculum of effective secondary vocational education programs for special populations include the following:

- Modifications should be made based on the student's individual needs identified through the vocational assessment process and the individualized education plans.
- Vocational instructors, special education teachers, special populations coordinators, and administrators should work together to modify the curriculum.
- Modifications should include changing the instructional content, the instructional practices, and the instructional materials to coordinate with students' needs.

- Instructional content should be adjusted to focus on subject areas that include self-esteem, basic skills, work attitudes and behaviors, job-seeking skills, independent living skills, prevocational and vocational skills

- Teachers should use a variety of alternative methods and strategies for instruction that are based on the levels and learning styles of students (e.g., individualized instruction, competency-based instruction, job simulation, on-the-job training, computer aided instruction, audio-visual aids and group instruction)

- Instructional materials should be developed by special education, vocational personnel, and other school personnel to address individual needs.

- Materials used for special populations should include hands-on activities for students.

Support Services

Most vocational personnel working with special populations students recognized that they did not all learn by the same mode or at the same rate. Generally, vocational personnel were in agreement that special populations students were capable of succeeding in vocational programs. Therefore, support services (also called supplemental services) were provided for vocational students and staff in order to increase vocational success. Phelps (1985) stated, "A broad range of support services enhance the likelihood of success for special needs learners: basic skill instruction, equipment modification, language interpreters, special instructional materials, English as-a-second language instruction, modified vocational instruction by special education and other staff, employability skills instruction, and career information and counseling" (p. 25). One counselor indicated that a strong support system is needed when working with special populations, not only for the teachers but also for students. The Maryland State Department of Education (1984) has indicated that, "The goal of any support given to students is to build and maintain vocational education success, which enhances future employment endeavors, opportunities, and mobility" (p. 57). In addition, the Perkins Act mandates that each state use 57 percent of its funds to provide vocational education services and activities to meet the needs of special populations students.

Student Support

One full-time coordinator of supplemental services generally is responsible for assisting students in receiving the appropriate services, although various persons (support staff) were involved in carrying out the activities. According to Tindall et al. (1980), "It is important, however, that one individual have

responsibility for planning and coordinating services. Without a coordinator, services may be conflicting and/or duplicated" (p. 444).

Support services provided to special populations are based on individual student needs. For handicapped and disadvantaged students, most services are provided by special education, vocational education, regular school districts, or community-based organizations. As Tindall et al. (1980) noted, "The community agencies which offer ancillary services to students and their families are the social service department, the welfare department and private rehabilitation agencies" (p. 443). Many schools reported providing speech therapists, reading specialists, psychologists and social workers for handicapped and disadvantaged students. In addition, the economically disadvantaged students receive drop-out prevention services and assistance from government agencies such as free breakfast and lunch programs. Most interviewees for this study indicated that services are needed for the following areas: modification of curriculum, adaptation of materials, performing assessment tests, guidance and counseling, remedial and tutorial assistance, and health-related (mental and physical) problems.

The services provided to handicapped and disadvantaged students are available for the other special populations as well; however, the needs vary with each population. LEP students require more assistance in instructional adjustments. For example, tutors, interpreters (bilinguists), resource teachers who specialized in the native language, or volunteers from the community who had some familiarity with the native language of these students are used to assist in instructional adjustments. One vocational director of a special program for LEP students also noted, "Social clubs offer support for students by providing tutorial assistance and building their self confidence and self-esteem." At most schools participating in this study, the kinds of support services available for single parent students consisted of child care and child development, health care for pregnant teens and their children, guidance in parenting, and transportation to and from the facilities. Wiberg and Mayor (1985) noted, "To stay in school and prepare for employment, teenaged parents need child care and transportation, a support network of teachers and peers who provide understanding as they handle their many problems, instruction in parenting skills and child development, the opportunity to develop self-esteem, exposure to non-traditional careers and counseling and career guidance" (p. 33). For students enrolled in nontraditional programs, career counseling and guidance, job placement, and referrals to community agencies are the basic support services provided by the schools that participated in this study.

Vocational Instructor Support

Support services for vocational instructors are believed to be extremely essential for the success of special populations students in vocational programs. Most vocational personnel expressed the viewpoint that support from the administration is a most needed service. In effective programs, administrators are aware of the problems and needs of the instructors. Often it is the administrators who have the authority or the knowledge of how to provide additional services needed for the students and the instructors. A vocational supervisor remarked, "I think it is very important to have support from the administration . . . I think special initiative should take place when dealing with special populations because you are talking about additional resources from the community, equipment with added safety features and more, which you can get only by having support from the administration." The administrators, however, did not always interact directly with the vocational instructors. It is the full-time coordinator who coordinated all activities for the services needed by the vocational instructors. The vocational instructors interviewed expressed the need for support services in the following areas: instructional assistance, development of alternative teaching strategies, identifying various resources, understanding the population, modifying the curriculum, assessing students' strengths and weaknesses, and developing programs geared toward a specific special populations category.

Interviewees indicated that inservice activities are a most effective support system, particularly for vocational personnel who lack experience in working with special populations. Many interviewees believe that inservice training should be mandatory for these personnel. However, as shown in figure 4, 47 percent of the respondents to the mail survey of state special populations coordinators required inservice education activities in their state which focused on more effectively serving special populations for vocational personnel with little or no experience with special populations. Meers (1981) noted, "Well planned inservice

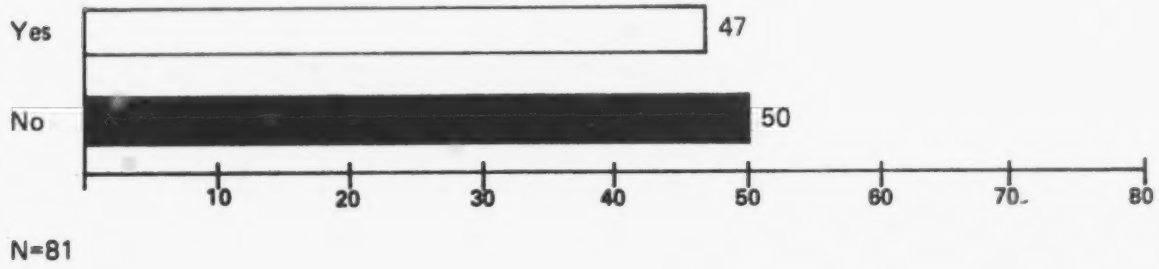


Figure 4. Percentage of respondents indicating that state has requirements for inservice education activities for personnel working with special populations.

programs will lead to better identification of the needs of special needs students, better programs for them, better utilization of their interests, and the setting of goals that are realistic and attainable. As vocational teachers are trained to be sensitive to the unique needs of their students, all students will benefit. The apprehension and fear that vocational teachers have about special needs students will be reduced" (p. 37). Many vocational personnel noted that it was important to address the appropriate topics and involve qualified professionals for the inservice activities to be effective. Inservice programs are often conducted in workshops and seminars by co-workers with experience in dealing with special populations or by other professionals from special education, vocational rehabilitation, the state department, employers or community organizations.

As one supplemental service specialist stated, "Educating the vocational instructors and others has been a real plus and we've done that through inservice." The local vocational staff interviewed noted that not only should vocational instructors who lack experience attend inservice activities but also all persons responsible for special populations should be involved. As shown in figure 5 over 96 percent of the respondents to the mail survey of state vocational education special populations coordinators believed administrators, special populations coordinators, vocational teachers of special and mainstream programs, academic teachers, vocational counselors, and vocational evaluators should participate in inservice education activities that address working with special populations.

Teacher aides or volunteers (with teaching experience) and vocational support staff (sometimes referred to as resource teachers by interviewees) are also quite effective support services for vocational instructors. Teacher aides or volunteers are able to provide one-on-one instruction to the students, allowing time for the instructor to observe all students more closely. The aide sometimes acts as a liaison between the student and the support staff. One vocational instructor noted, "Through general observations, teachers can focus on the problem of students. For example, whether they have behavioral problems, whether the student is participating in class activities, or whether they are actually getting their lessons completed." The vocational support staff generally are qualified and experienced personnel required to work on day-to-day activities with the students and the vocational instructors to ensure the success of special populations students. One resource teacher stated, "We would modify the curriculum, modify the materials, and work with the employers and the student to create an effective vocational program for the student." The resource teachers assist within the classroom as well by presenting a lecture or reading an exam to a student. Vocational support staff assist vocational instructors in any way possible to maintain and increase the success of special population students.

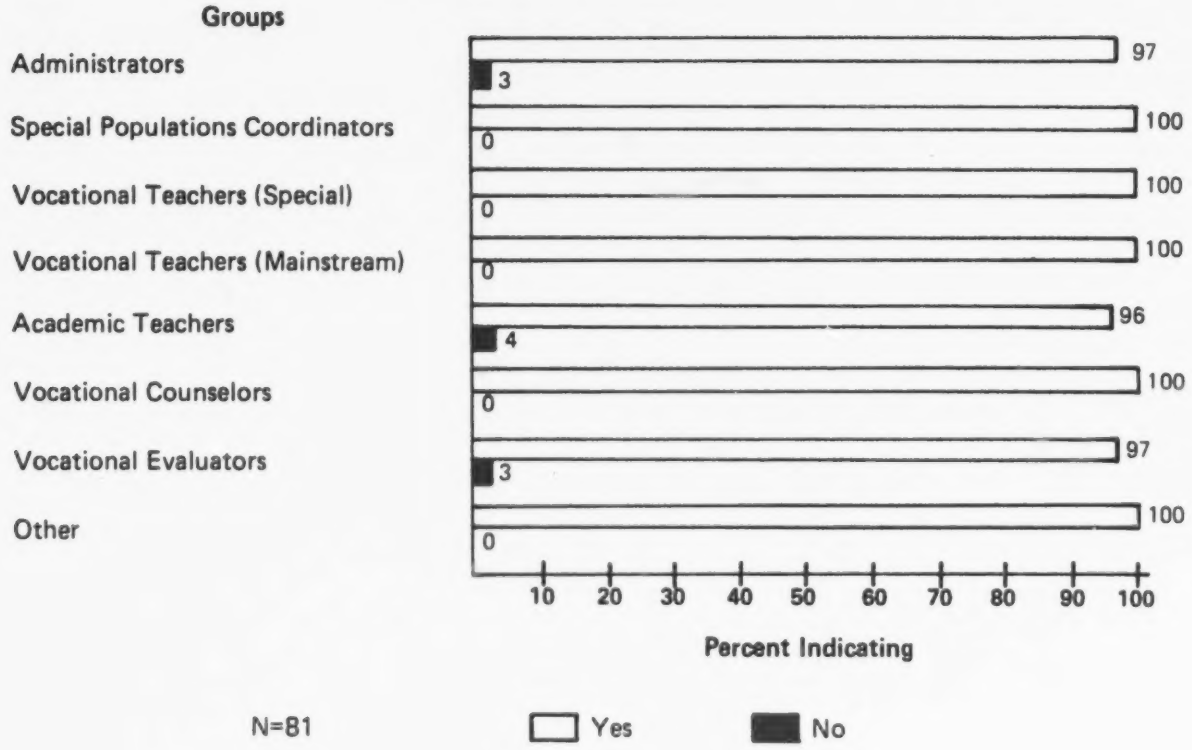


Figure 5. State vocational education special populations coordinators indications of groups who should participate in inservice education activities.

Summary

Federal legislation and local education agencies state the significance of providing appropriate support services for the vocational student and the vocational instructor. Although there generally is one designated coordinator responsible for arranging the support services, there usually is a combination of providers (i.e., special education, vocational education) for these services. Instructional services, remedial and tutorial services, work-related services, inservice activities and support personnel are all recognized as the most often used and needed services for effectively serving special populations students.

Effective support services for secondary vocational education programs for special populations have the following characteristics:

- Support services should be provided for special populations students and vocational instructors.

- A full-time coordinator should be is assigned to ensure that the appropriate services are identified and monitored.

- A combination of educational agencies and community-based organizations should be involved in providing services to special populations (i.e., health, social service, welfare, and rehabilitation agencies, and vocational education, special education, and regular education organizations).

- An effective and supportive administration should ensure the implementation of services for vocational instructors, and for the special populations students.

- Inservice activities should be provided that address appropriate topics and involve qualified special populations professionals on a consultative basis.

- Vocational instructors should have teacher aides or volunteers available for assistance with instruction in or out of the classroom.

- Vocational support staff should be available to assist vocational instructors with any problems.

Program Evaluation

The data concerning program evaluation were obtained primarily from the questionnaire sent to state vocational education special populations coordinators. A limited amount of information comes from the on-site interviews.

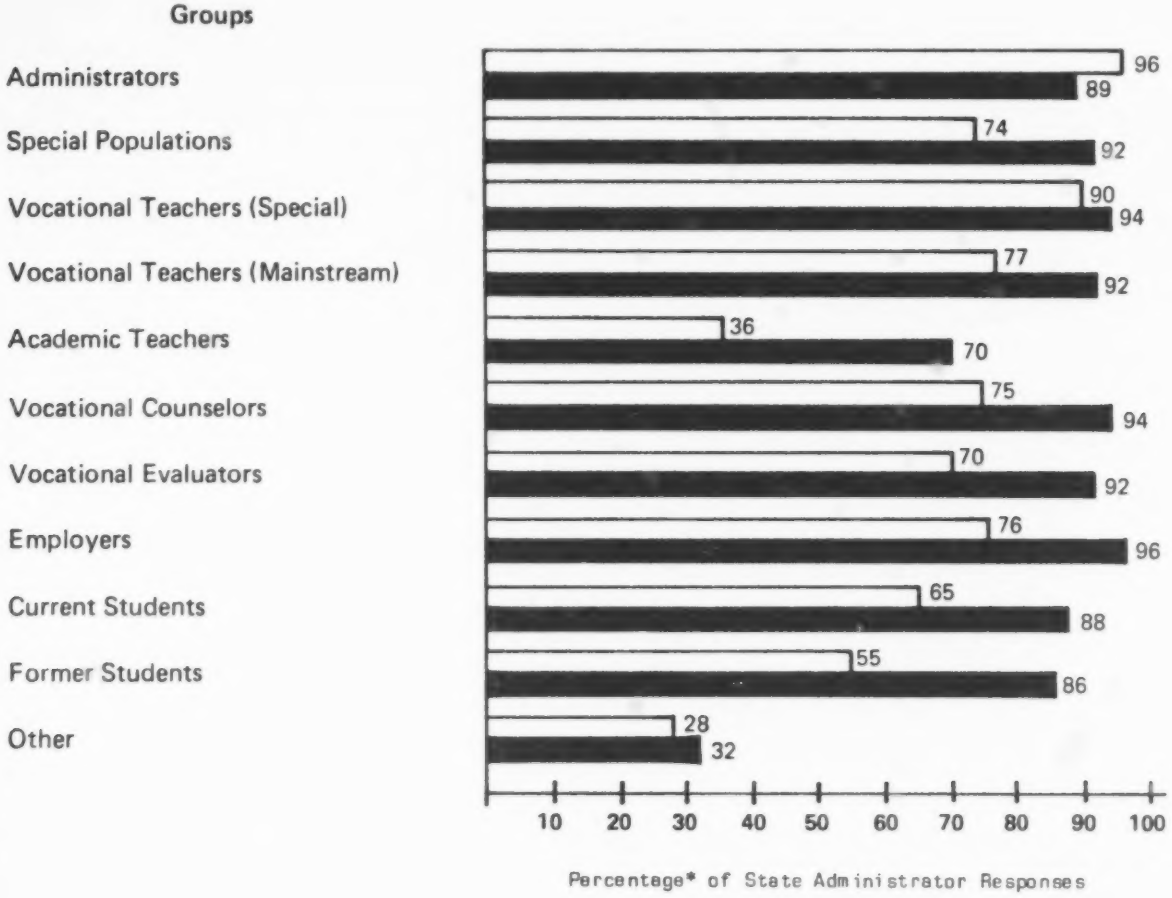
Who Is Involved in the Evaluation?

The responsibility for program evaluation is distributed across the state and local levels. The titles of those responsible for evaluation vary widely. At the state level, a supervisor or director is most frequently named, and at the local level, a local administrator generally holds the responsibility for program evaluation.

The information in figure 6 illustrates a comparison between two related questions: (1) Who is involved in the evaluation of local vocational education programs for special populations, and (2) Do you feel that each of the following should be involved in the evaluation of local vocational education programs for special populations? The information shows that state administrators felt

that local administrators should be less involved than they presently are. However, the state administrators expressed a desire for increased involvement from each of the other group members listed. This survey did not assess the administrators' opinions concerning (1) the reasons why a broader range of involvement is desired, (2) the extent of involvement desired from each category of persons, and (3) how these persons should be utilized in the evaluation process.

The most frequently cited topic concerning "who" should be involved in the evaluation deals with the need to allow current



*Percentages have been rounded to nearest 1 percent

Figure 6. A comparison of state vocational education special populations coordinators' opinions concerning groups of persons who are involved and who should be involved in the evaluation of local vocational education programs for special populations.

students to evaluate the programs. Sixty-five percent of the administrators said that the students were involved; however, 88 percent said that they should be involved. This desire for increased student involvement in program evaluation is supported by the on-site interviews. One supervisor said, "I feel that a very good way to evaluate the program is to allow the students to evaluate the program. How do they feel about the programs? Do they feel that when completed they will be able to go out and at least have entry-level employment related to that class?" One principal said, "I think the kids can assess programs. I think a lot of times evaluators leave kids out of the picture when they do assessment of the program. We are calling them stakeholders." Responses to the "others" category concerning who should be involved included parents, state staff, advisory boards, business and industry, and anyone who is involved in the program. According to Meyer (1972), if a program is to succeed, personnel on all levels who are to be concerned with its development should, in turn, be members of the evaluative team" (p. 2). McKinney et al. (1985) strongly support the involvement of stakeholders in vocational education program evaluation. They suggest that stakeholder involvement develops intense stakeholder feelings and beliefs about the value of their proposals, resulting in greater commitment to change.

Descriptions of type of reports required by the state, included "program reviews" or "mid-year and final reports." One administrator indicated that no report was required.

The type of instrument used in evaluating programs is frequently labeled as a (1) standard program review, (2) checklist or questionnaire, or (3) narratives based on program objectives. Program review (also required by vocational education legislation) was most frequently cited as the type of instrument used.

Perceived Effectiveness

There is little variability in the responses to the question "How effective do you feel the evaluation of vocational education programs for special populations is in your state?" The responses were elicited for each category of special populations student. The averages of the responses range between "somewhat effective" and "effective." The averages indicate that the administrators feel evaluation procedures are most effective for the handicapped and disadvantaged category and least effective for the limited English-proficiency category. The reasons for the differences in perceived effectiveness were not elicited by the questionnaire.

Variables Evaluated

One question in the survey asked the state administrators to list the variables taken into consideration when evaluating a program. These variables were listed in terms of input, process,

and outcome variables. Variables that were typically mentioned are listed in exhibit 3.

The input variables included items such as physical qualities student characteristics, services, and, most commonly, staff competencies. The process variables generally deal with instructional procedures and educational content. Program outcome is most commonly measured in terms of job placement rate. Other outcome variables include educational placement, attitudes (student, teacher, and parent), and enrollment figures (numbers of graduates and drop-outs).

In 72 percent of the cases, the evaluation standards were the same for the special vocational education programs and mainstream programs serving special populations. Many of the state administrators felt that these standards should not differ because the desired outcomes (i.e., employability) are the same for both types of programs. Often, the objectives of the two types of programs are different. This usually results in separate evaluation standards for each program. For example, programs designed to reduce sex bias may have an evaluation emphasis toward attitude change, or programs for handicapped or disadvantaged persons may measure success in terms of a less demanding set of goals.

Sixty-one percent of the state administrators stated that community-based organizations that are involved with the program are also evaluated. These organizations are generally evaluated in terms of the extent or degree of involvement, and/or cost benefits associated with such involvement.

Problems in Evaluation

The most frequently cited problem in evaluating vocational education programs for special populations is insufficient funding and/or staff to complete a thorough evaluation. Results from the state special populations coordinator questionnaire show that on average, 10 percent of the total budget is allocated to program evaluation. Apparently the administrators feel that this is not enough. Several administrators felt that the follow-up portion of evaluation suffered the most because of lack of funding. Other problems in evaluation include lack of:

- ability to measure attitudes,
- measurable properties to establish reliable and valid evaluation criteria,
- knowledge on how to develop an evaluation instrument,
- administrator commitment and support of the evaluation process,

EXHIBIT 3

STATE LEVEL STAFF INDICATION OF INPUT, PROCESS, AND OUTCOME VARIABLES TAKEN INTO CONSIDERATION WHEN EVALUATING VOCATIONAL PROGRAMS FOR SPECIAL POPULATIONS

Input	Process	Outcome
Teacher skills (experience, certification, social skills)	Procedures	Job placement
Counselor skills	Educational content	Employment duration
Coordinator competencies	Instruction methods	Student needs
Staff collaboration	Correlation with objectives	Labor market demands
Staff referrals	Support services	Follow-up
Staff sensitivity	Costs	Training placement
Inservice, staff development	Student assessment	Educational placement
Parental attitudes	Field trips, speakers	Student self-awareness
Classroom setting	Advisory committees	Employer needs
Physical facilities	Skills learned by students	Nontraditional enrollment changes
Materials	Student awareness of jobs and services	Employment or mainstream success
Resource availability	Materials used	Teacher, parents, student satisfaction
Accessibility	Attitude change (sex bias	Work attitudes
Enrollments (type and numbers)		Drop-out rate
Peer group activities		Graduation rate
Student characteristics		Whether objectives are met
Recruitment devices		Student progress and change
Services		Starting salary
Child care		
Transportation		

- clear-cut objectives upon which to base the evaluation, and
- the presence of evaluators who know about vocational education or special populations.

Meyer (1972) provides some focus on this last point. "An over reliance upon evaluation from outside experts too often results in these evaluators overlooking or failing to place emphasis on many important factors within the program. Outside experts may lack knowledge and feel for the community and school staff, and there is little guarantee that their recommendations will be implemented" (p. 9).

Use of Evaluation Reports

Warden and Lehrman (1979) provide the following list of reasons for understanding a review of a vocational education program for handicapped students:

- To answer the question "What are we doing now?
- To be able to better explain our program to parents and the community.
- To find out if the program complies with state and federal laws.
- To determine areas for further improvement.
- To identify program strengths.
- To become familiar with areas where people see problems arising.
- To determine how to use resources wisely.
- To involve key people in the planning process.
- To prepare people for the idea of change.
- To document program progress.
- To document additional needs.
- To provide evidence for fundseeking.

- To involve parents and community members in the program.
- To identify barriers which must be overcome.
- To provide a basis for goals and objective development.
- To better serve the handicapped at the classroom level in vocational education. (p. 3)

When asked "How are these evaluation reports used to improve vocational education programs for special populations?", the state coordinators mention, in one form or another, most of the points listed above. The information displayed in exhibit 4 shows common responses of state vocational education special populations coordinators concerning the ways evaluation reports are used. Some of the more common responses show that evaluations are used by the state for fiscal planning, assessment of program needs, and as a basis upon which to make recommendations for program improvement. It is interesting to note that although the question elicits ways in which the evaluation report is used

EXHIBIT 4

USES FOR EVALUATION REPORTS AS REPORTED BY STATE VOCATIONAL EDUCTION SPECIAL POPULATIONS COORDINATORS

Aid program improvement.
Determine recommendations for improvement.
Determine eligibility for continued funding.
Identify strengths and weaknesses.
Formulation of corrective action plans.
Aid long-range planning.
Develop of inservice programs.
Make decisions to discontinue ineffective programs.
Determine need for more detailed evaluation.
Establish priorities.
Plan for future programs.
Reports.
Determine whether program is meeting students' needs.
Identify exemplary programs.
Evaluate how grants are being used.
Identify barriers to education and employability.
Determine compliance with the law.
Assess degree to which recommendations have been followed.
Analyze outcomes and make adjustments.
Identify needs.
Provide technical assistance.
Determine accountability.
Assess effectiveness.
Determine populations not being served.
Aid fiscal planning.

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for program improvement, most of the state administrators indicate they use the instrument to assess accountability and justification for continued funding. Legal compliance is often the criteria used to base justification for funding. Along these lines a typical response is, "written reports of on-site program evaluations and evaluations of special services are submitted to the local administration with the requirements that areas found to be in noncompliance be corrected or result in loss of program approval and eligibility for funding." It is also mentioned that the reports are used to assess the degree to which the previous year's recommendations had been implemented.

Summary

A wide variety of persons are reported to be involved in the evaluation process. Generally however, the state coordinators felt that more people should be involved. The instrument used in evaluation is most often called a "standard program review."

The program variables that are most frequently considered in the evaluation process included staff competencies, educational content, and job placement rate. Job placement is emphasized as the most important measure of success.

The majority of the state coordinators indicated that the same standards used for evaluating special vocational education programs are used to evaluate mainstream programs that serve special populations. Most felt that the standards should not be different because the outcome goals are the same for each type of program.

Not surprisingly, the most commonly cited problem in evaluation is the lack of enough funding and/or staff to perform the evaluation. Other problems mentioned are generally a concern over the ambiguity in measurement and criteria definition.

Evaluation reports are used for program planning and improvement, accountability, and financial justification according to the many state special populations coordinators. Determining the status of a program's legal compliance is sometimes cited as the primary use of the evaluation reports.

In terms of program evaluation, effective vocational education programs for special populations have the following characteristics:

- Teachers, students, administrators, parents, and others who are involved in the program and should also be involved in the evaluation of the program.
- A variety of input, process, and outcome variables should be considered during the evaluation.

- Evaluation reports should be used for program planning, improvement, accountability, and legal compliance.

Student Evaluation

Not only should vocational assessment of special populations begin before entering a vocational program, it should be a continuous, ongoing process. Phelps and Wentling (1977) noted, "After the initial diagnosis and placement is made there is a continuing need to monitor the learner's progress and make necessary adjustments in (1) the identification of his or her learning problems and placement, (2) the learner's educational needs assessment, and/or (3) the instructional techniques used" (p. 21). One vocational evaluator stated, "It is an ongoing process. Once you get a student in a program, you need to evaluate how they are progressing. Are they going to come out of that program with employable skills?" Evaluation of special populations students by vocational instructors at the sites visited involved monitoring the progress of each student. The evaluation included assessing the students' skill development and attitudes throughout the vocational program. In addition the evaluation was used to identify what changes or modifications were needed in order for the student to continue and complete the program. Albright (1978) noted, "The data collected on student performance are to serve two purposes: (1) to assist in determining the learner's level of proficiency on a given task or tasks, and (2) to identify specific modifications which need to be made in the learner's instructional program to increase skill development" (p. 1).

The student evaluation process serves as a feedback mechanism between the vocational instructors and the students, between the students and their parents, and between the vocational instructors and administration. It provides administrators with information for the evaluation of the vocational programs for special populations. As noted by Phelps and Wentling (1977), "It [evaluation] can provide to instructors and program managers information that is useful in revising program components and changing instructional strategies. Instructors can use formative assessment information to better understand the needs of individual students and communicate to them descriptions of their progress and achievement in the cognitive, affective and perceptual/psychomotor domains of performance" (p. 26). Formative assessment was defined as monitoring student progress throughout instruction.

Due to the special needs of special populations students, teachers indicate it is difficult to assess all students in the same manner. Traditional techniques are altered by the instructors in order to evaluate student progress successfully. Preassessment information on the specific problems of the students assists the instructors in how the techniques should be modified. One vocational instructor stated, "Some special populations

students have difficulty reading and understanding a written test, therefore, I give them oral exams. I am not testing their reading abilities, I am testing their knowledge." Hutchison and Wonacott (1984) noted, "Sometimes, the characteristics of students with exceptional needs (e.g., limited English proficient, mentally retarded, individuals enrolled in programs non-traditional for their sex) interfere with their performance on the assessment instrument. Therefore, in order to assess accurately what a student with exceptional needs actually knows and is able to do, it may be necessary to modify your assessment techniques" (p. 3).

Many vocational instructors indicated that several different types of evaluation activities are effective in assessing the students skill development and attitudes. The evaluation activities include: formal testing (paper and pencil), performance testing, work simulation (hands-on testing), and observations. In agreement with these vocational instructors, Phelps and Wentling (1977) also note these assessment activities (with the addition of learner product assessment) for assessing the general progress of the students and to identify what modifications need to be made in the instructional program.

Formal Testing

Using formal testing or paper-and-pencil tests often require vocational instructors to modify the tests or the way the test is used, particularly for the handicapped, disadvantaged, and limited English-proficient students. A special populations coordinator noted, "In the event the student has difficulty taking tests, a variety of testing measures can be taken. The test could be given orally or written at a lower reading level for the student." When tests are given orally, vocational support personnel sometimes have to assist the vocational instructors by actually reading the test to the student. The support personnel or vocational instructors frequently use different words to interpret the question for them. Some tests are rewritten at a lower reading level to accommodate the students' reading abilities. For limited English-proficient students, the support personnel work with the instructors by translating the test into the students' native languages.

Many vocational instructors stressed that the tests should not be too overwhelming for special populations. They indicated that paper-and-pencil tests should be very short and given in levels or stages. A vocational instructor stated, in agreement with other instructors, "I think it is important to use the test as an evaluation tool, however, you should only test on one aspect of a unit. Don't expect special populations to learn everything at once."

Performance Testing

Performance testing is a highly emphasized evaluation activity by vocational instructors, special education teachers and special populations coordinators. This is an alternative technique to paper-and-pencil tests. Performance testing consists of having the student demonstrate or perform a particular skill while the instructors observe and evaluate the performance. As stated by Hutchison and Wonacott (1984), "Performance testing often does not require students to read and write. It thus allows students with poor reading and writing skills to demonstrate their knowledge in another way" (p. 8).

Most vocational instructors interviewed indicated that the information collected on student performance of specific skills was used to develop performance profiles. A special populations coordinator stated, "We at the skills center maintain folders on each student to document every time a competency has been reached so that you have a profile on what that student has achieved." The performance profiles provide parents, students, and administrators with documents on the performance of special populations students. Checklists are used to note what skills were performed and how well the student performed. According to Albright, "Two instruments for use when observing and recording student performance have been suggested: (1) a checklist, and (2) a graphic-scale. Checklists enable the instructors to assess specific performance skills . . . and serve as a helpful tool in a follow-up discussion with the student" (p. 4).

Work Simulation

Vocational instructors interviewed indicated that not only does evaluation of the student occur in the classroom, evaluation activities were also given in the labs or shops as well. In the labs and shops, the instructors are able to evaluate special populations students in an actual work environment to determine if the students are developing their job skills and work attitudes. Most vocational instructors interviewed indicated that factors such as interpersonal skills, personal appearance, and dependence are evaluated. A vocational instructor noted, "For special needs, the majority of of the evaluation must be dealt with in the lab. They can often do the vocational work but they cannot take the tests. The evaluation must include attendance, punctuality and job attitudes."

Observations

The vocational instructors interviewed agreed with Phelps and Wentling (1977) that observations of the students are useful for assessing the general progress of special populations learners. As in the preassessment process, by observing the students' behaviors and attitudes, self-esteem, and vocational

skills and abilities, the vocational instructors identify specific difficulties the students encounter or changes that may be needed in the program itself to increase the progress of each student. Albright (1978) indicated, "Through careful observations, the teacher can diagnose student difficulties and take corrective steps before inappropriate patterns set in" (p. 2).

Summary

Student evaluations inform the students, the vocational instructor, the parents, and the vocational administration of student progress in vocational programs. The information obtained through special populations student evaluations provides vocational educators with a basis for identifying what modifications are necessary to increase the students' level of performance. Sometimes, the characteristics of special population students prevent instructors from accurately assessing them, therefore, modifications in the techniques used are often necessary. The most commonly used techniques consist of formal testing, performance testing, work simulation, and observations.

Key characteristics relating to student evaluation in effective secondary vocational education programs for special populations include the following:

- Student evaluation should involve monitoring students' skill development and personal growth in attitudes and behaviors.
- Information obtained through the evaluation process should be used to inform students, parents, and administration of student progress and what is necessary to improve performance.
- Traditional techniques of student evaluation (e.g., written tests) should be altered (e.g., teachers or aides read tests, test items are written at lower reading levels) to assess special populations students accurately and according to their unique characteristics.
- Techniques most often used for evaluating special populations students should include formal testing (paper-and-pencil tests), performance testing, work simulation, and observations.

CHAPTER 4

SUMMARY OF EFFECTIVE CHARACTERISTICS

It is appropriate to view the summary of effective characteristics in light of some of the contextual characteristics surrounding secondary vocational education programs for special populations and the methodological dimensions of this study. Given the variation in the characteristics of the categories of special populations (handicapped, disadvantaged, limited English-proficient, single parent, and individuals enrolled in programs designed to eliminate sex bias and sex stereotyping) one must be cautious about assuming equal applicability of an effective characteristic across all categories.

One of the strengths of secondary vocational education programs for special populations is the diversity of goals, programs, services, students, staff, curriculum, and methods of instruction. The attention given to the unique needs of each individual contributes substantially to the success of programs. Given these essential, unique features it is critical to remember that the findings in one setting are transferable to another setting only to the extent that those settings possess characteristics similar to the settings studied.

Caution should be exercised in interpreting the characteristics of effective programs. The identification of effective characteristics does not automatically translate into the goals for all programs desiring to be exemplary. Effective characteristics are context specific; what works in one site may or may not work in another site for a multitude of reasons.

EFFECTIVE CHARACTERISTICS

The following characteristics are based on the integration of information from current literature, local site visits to exemplary secondary vocational education programs for special populations, and mail surveys to state coordinators of secondary vocational education programs for special populations:

- o Community Setting

  - School personnel should encourage parental involvement in the program.

  - School personnel should actively and systematically provide parents with information concerning programs and services available to the parents and the students.

- Public awareness programs should be included in school activities.

- School personnel should educate employers in order to dispel common misconceptions about employing special populations workers.

- School personnel should routinely be involved in developing contacts with employers.

- Employers and other community members should hold positions on school advisory committees.

o Classroom Setting and Facilities

- The number of students in classes with special populations students should range from 11-15 students.

- Positive social interactions between special populations students and non special populations students should be encouraged.

- All students should have easy access to and movement through the classroom.

- Assessment of equipment needs should be made on an individual basis.

- Special equipment that cannot be purchased should be custom build on the premises.

- A school staff member should be assigned the responsibility of obtaining and providing information to special populations students on the types of special equipment available.

- School personnel should put forth an extra effort to accommodate the architectural and equipment needs of the students.

o Personnel Characteristics

- Staff should be willing to experiment and should be innovative in the search for the most effective methods of teaching each special populations student.

- Teachers should be positive role models and should attempt to alleviate social rejection by the students' classmates.

- School personnel should be non biased toward special populations students.

- School personnel should enjoy working with special populations students and should be willing and able to work with each student on an individual basis.

- School personnel should show patience when working with students.

- Teachers should have confidence in their abilities to work with special populations students.

- Administrators should have positive attitudes toward accommodating special populations students and be supportive of teachers.

- School personnel should have expertise in their subject field and additional training to work with special populations students.

o Finances

- Multiple sources of funds are coordinated to maximize their effective and efficient use.

- Funds are available to maintain up-to-date equipment and materials.

o Preassessment

- Identification of learning styles, physical and/or behavior problems, and vocational interests and abilities should begin as early in the student's educational program as possible, particularly before the student enters high school or a vocational program.

- Preassessment should be included as a part of career education or career exploration programs.

- Vocational evaluators should conduct the diagnosis and should prepare the recommendations for all interested parties.

- A variety of assessment tools and methods should be used during the preassessment process including background data (student's family background, medical information, and educational performance), personal interview (student's interests, attitudes, and

behaviors); formalized testing (documented data on students' basic skills and vocational aptitudes and abilities); hands-on assessment (student experiences the type of work involved in the vocational program); and exit interview (information is distributed to all interested parties).

- Individual Education Plan

  - All persons responsible for the handicapped student should be involved in the development of the individual education plan (e.g., parents, vocational counselors, special education teachers, vocational teachers).

  - The staff of the vocational education department should be included in the preparation of the vocational component of the individual education plan, particularly the instructors who will be working with the handicapped student.

  - Coordination should occur between the special education and the vocational education instructors in implementing the objectives stated in the individualized education plan and in evaluating the extent to which the goals are achieved.

- Modifying Curriculum

  - Modifications should be made based on the students' individual needs identified through the vocational assessment process and the individualized education plans.

  - Professionals such as vocational instructors, special education teachers, special populations coordinators, and administrators should work together to modify the curriculum.

  - Modifications should include changing the instructional content, the instructional practices, and the instructional materials to coordinate with students' needs.

  - Instructional content should be adjusted to focus on subject areas that include self-esteem, basic skills, work attitudes and behaviors, job seeking skills, independent living skills, and prevocational and vocational skills.

- Teachers should use a variety of alternative methods and strategies for instruction based on the levels and learning styles of students (e.g., individualized instruction, competency-based instruction, job simulation, on the job training, computer-aided instruction, audiovisual aids, and group instruction).

- Instructional materials should be developed by special education, vocational personnel, and other school personnel to address individual needs.

- Materials used for special populations should include hands-on activities for students.

o Support Services

- Support services should be provided for special populations students and the vocational instructors.

- A full-time coordinator should be assigned to ensure that the appropriate services are identified and monitored.

- A combination of educational agencies and community-based organizations should be involved in providing services to special populations (i.e., health, social service, welfare, and rehabilitation agencies, vocational education, special education, and regular education organizations).

- An effective and supportive administration should ensure the implementation of services for vocational instructors and for the special population student.

- Inservice activities should be provided that address appropriate topics and involve qualified special populations professionals on a consultative basis.

- Vocational instructors should have teacher aides or volunteers available for assistance with instruction in or out of the classroom.

- Vocational support staff should be available to assist vocational instructors with any problems.

o Program Evaluation

- Teachers, students, administrators, parents, and others who are involved in the program should also be involved in the evaluation of the program.

- A variety of input, process, and outcome variables should be considered during the evaluation.

- Evaluation reports should be used for program planning, improvement, accountability, and legal compliance.

o Student Evaluation

- Student evaluation should involve monitoring students' skill development and personal growth in attitudes and behaviors.

- Information obtained through the evaluation process should be used to inform students, parents, and administration of student progress and what is necessary to improve performance.

- Traditional techniques of student evaluation (e.g., written tests) should be altered (e.g., teachers or aides read test, or test items are written at lower reading levels) to assess special populations students accurately and according to their unique characteristics.

- Techniques most often used for evaluating special populations students should include formal testing (paper-and-pencil tests), performance testing, work simulation, and observations.

o Student Characteristics

Although not a part of the search for characteristics of effective programs, analysis of the data revealed the following general characteristics of special populations students in secondary vocational education programs.

- Immature behavior

- Short attention span

- Easily frustrated and bored

- Negative self-image and lack of self-confidence

- Lack of communication skills

- Performance below grade level

- Poor health characteristics

- Family income generally at or below poverty level

On the basis of the data reviewed and findings of characteristics of effective vocational education programs, the following recommendations are made for further research.

- In-depth research is needed concerning the problems of delivering effective vocational education programs for the specific categories of special populations (e.g. single parents, limited English proficient, and so forth). There are many common elements across all categories, but the specific nuances are critical when attempting to maximize program outcomes.

- The problems of evaluating secondary vocational education programs for special populations are not significantly different from evaluating all vocational education programs. Extensive research and development is needed concerning appropriate evaluation frameworks and more meaningful ways to involve program stakeholders.

APPENDIX A

STUDY CONSULTANTS

The following individuals provided advice regarding various phases of the study.

Edgar I. Farmer
North Carolina State University

Seymour Lesh
National Child Labor Committee

James P. Lewis
Pennsylvania Department of Education

L. Allen Phelps
University of Illinois

APPENDIX B

MAIL QUESTIONNAIRE

CONFIDENTIAL - FOR RESEARCH
No. PURPOSES ONLY

YOUR PARTICIPATION IN
THIS STUDY IS VOLUNTARY

DETERMINING FACTORS OF EFFECTIVE VOCATIONAL EDUCATION PROGRAMS AND EVALUATION PROCEDURES FOR SPECIAL POPULATIONS

Conducted by:
The National Center for
Research in Vocational Education
The Ohio State University

Sponsored by:
Office of Vocational and
Adult Education
U.S. Education Department
In cooperation with your
State Department of Education

Name: _____ Title: _____

State _____ Phone no. (___) ___ - _____

Please check the special populations category(s) for which you are responsible. (Check all that apply)

[ ] HANDICAPPED INDIVIDUALS

[ ] DISADVANTAGED INDIVIDUALS

[ ] SINGLE PARENTS

[ ] INDIVIDUALS WITH LIMITED ENGLISH PROFICIENCY

[ ] INDIVIDUALS WHO PARTICIPATE IN PROGRAMS DESIGNED TO ELIMINATE SEX BIAS AND STEREOTYPING IN VOCATIONAL EDUCATION

IN ANSWERING THE QUESTIONS, PLEASE LIMIT YOUR RESPONSES TO THE CATEGORY(S) YOU CHECKED ABOVE.

THANK YOU

WHY WE NEED YOUR HELP . . .

Your state is helping in a national study on vocational education. You have been selected as a representative of your state to help with this study to determine factors relating to effective programs for special populations (handicapped individuals, disadvantaged individuals, single parents, individuals with limited English proficiency, and individuals who participate in programs designed to eliminate sex bias and stereotyping in vocational education), and to identify essential methods and procedures for evaluating vocational programs for special populations. Your answers are very important for the success of this study.

HOW CAN YOU HELP . . .

On the next page, you will find questions about vocational programs for special populations. A number of questions can be answered by placing a check mark "✓" in the brackets, or by responding to an open-ended question. Please answer all items as accurately as possible. If you are unsure of a response, leave that question or that part of the question blank.

Example: How important are the following factors for special populations students in obtaining jobs?

	Extremely Important	Very Important	Somewhat Important	A Little Important	Not At All Important
1. Appearance	[5]✓	[4]	[3]	[2]	[1]
2. Basic Skills	[5]	[4]✓	[3]	[2]	[1]
3. Job Specific Skills	[5]✓	[4]	[3]	[2]	[1]

Please return the completed questionnaire in the postage-paid, preaddressed enveloped provided.

This information is **CONFIDENTIAL**; no data will be associated with the name of any individual or state. Note that we will have a code number on the questionnaire. This will only be used for follow-up purposes, and for data analysis.

1. For vocational education personnel in your state who work with special populations (handicapped, disadvantaged, limited English proficient, single parents, sex equity), are there any **REQUIRED** inservice education activities which focus on more effectively serving the above five groups?

(Circle number of your answer)

1 YES
2 NO

(If **YES**) what content areas are addressed for each special population listed below?

1 HANDICAPPED:

2 DISADVANTAGED:

3 LIMITED ENGLISH PROFICIENT:

4 SINGLE PARENTS:

5 SEX EQUITY:

2. For vocational education personnel who work with special population students in your state, how many inservice education hours are allotted to topics dealing with special populations?

(Please indicate for each group)	Number of Hours 1985-86	1984-85	1983-84
1 HANDICAPPED:	_____ Hrs.	_____ Hrs.	_____ Hrs.
2 DISADVANTAGED:	_____	_____	_____
3 LIMITED ENGLISH PROFICIENT:	_____	_____	_____
4 SINGLE PARENTS:	_____	_____	_____
5 SEX EQUITY:	_____	_____	_____

3. Do you feel that each of the following groups should participate in inservice education activities which address working with special populations? (Please check your response for each group)

		YES	NO
1	ADMINISTRATORS	[1]	[2]
2	SPECIAL POPULATIONS COORDINATORS	[1]	[2]
3	VOCATIONAL TEACHERS (SPECIAL)	[1]	[2]
4	VOCATIONAL TEACHERS (MAINSTREAM)	[1]	[2]
5	ACADEMIC TEACHERS	[1]	[2]
6	VOCATIONAL COUNSELORS	[1]	[2]
7	VOCATIONAL EVALUATORS	[1]	[2]
8	OTHER (please specify) _____	[1]	[2]

4. What was the total vocational education programming budget for special populations during the past 5 years?

[Please write in funding amounts for each category]

	Handicapped		Disadvantaged		Limited English Proficient		Single Parents		Sex Equity	
	Federal	State	Federal	State	Federal	State	Federal	State	Federal	State
1981-82	$____	$____	$____	$____	$____	$____	$____	$____	$____	$____
1982-83	$____	$____	$____	$____	$____	$____	$____	$____	$____	$____
1983-84	$____	$____	$____	$____	$____	$____	$____	$____	$____	$____
1984-85	$____	$____	$____	$____	$____	$____	$____	$____	$____	$____
1985-86	$____	$____	$____	$____	$____	$____	$____	$____	$____	$____

5. How adequate do you feel your **current budget** is with respect to **meeting the vocational education needs** of special populations in your **area?**

(Check number of your answer for each group)

		Not Adequate	Somewhat Adequate	Adequate	Very Adequate
1	Handicapped	[1]	[2]	[3]	[4]
2	Disadvantaged	[1]	[2]	[3]	[4]
3	Limited English Proficient	[1]	[2]	[3]	[4]
4	Single Parents	[1]	[2]	[3]	[4]
5	Sex Equity	[1]	[2]	[3]	[4]

6. How effective do you feel the evaluation of vocational education programs for special populations is in your state?

(Circle number of your answer for each group)

		Not Effective	Somewhat Effective	Effective	Very Effective
1	Handicapped	[1]	[2]	[3]	[4]
2	Disadvantaged	[1]	[2]	[3]	[4]
3	Limited English Proficient	[1]	[2]	[3]	[4]
4	Single Parents	[1]	[2]	[3]	[4]
5	Sex Equity	[1]	[2]	[3]	[4]

7. What percentage of the total budget for vocational education programs for special populations is allotted for:

(Please write in percentage)

1 Curriculum Development _____%
2 Equipment and Materials Modification _____%
3 Program Evaluation _____%
4 Vocational Assessment _____%
5 Inservice Education _____%
6 Other _____ (Please specify) _____%

8. Who has the primary responsibility for evaluating vocational education programs for special populations at the state and local levels?

1 **STATE LEVEL:**

2 **LOCAL LEVEL:**

9. Who is involved in the evaluation of local vocational education programs for special populations?

		YES	NO
1	**ADMINISTRATORS**	[1]	[2]
2	**SPECIAL POPULATIONS**	[1]	[2]
3	**VOCATIONAL TEACHERS (SPECIAL)**	[1]	[2]
4	**VOCATIONAL TEACHERS (MAINSTREAM)**	[1]	[2]
5	**ACADEMIC TEACHERS**	[1]	[2]
6	**VOCATIONAL COUNSELORS**	[1]	[2]
7	**VOCATIONAL EVALUATORS**	[1]	[2]
8	**EMPLOYERS**	[1]	[2]
9	**CURRENT STUDENTS**	[1]	[2]
10	**FORMER STUDENTS**	[1]	[2]
11	**OTHER (Please specify)** _____	[1]	[2]

10. Do your feel each of the following groups **SHOULD** be involved in the evaluation of local vocational education programs for special populations?

(Please check your response for each group)

		YES	NO
1	**ADMINISTRATORS**	[1]	[2]
2	**SPECIAL POPULATIONS**	[1]	[2]
3	**VOCATIONAL TEACHERS (SPECIAL)**	[1]	[2]
4	**VOCATIONAL TEACHERS (MAINSTREAM)**	[1]	[2]
5	**ACADEMIC TEACHERS**	[1]	[2]
6	**VOCATIONAL COUNSELORS**	[1]	[2]
7	**VOCATIONAL EVALUATORS**	[1]	[2]
8	**EMPLOYERS**	[1]	[2]
9	**CURRENT STUDENTS**	[1]	[2]
10	**FORMER STUDENTS**	[1]	[2]
11	**OTHER (Please specify)** _____	[1]	[2]

11. What input (e.g., classroom setting, teacher skills, peer group characteristics), process (e.g., instructional content and equipment teaching strategies), and outcome (e.g., job placement rate, employer needs, grade point average, educational placement rate) variables do you take into consideration when evaluating vocational programs for special needs populations?

1 **INPUT VARIABLES:**

2 **PROCESS VARIABLES:**

3 **OUTCOME VARIABLES:**

12. Are different standards used to evaluate **SPECIAL** versus **MAINSTREAM** vocational education programs for special populations?

(Circle number of your answer)

1 **YES**

(If **YES**) How do they differ?

2 **NO**

(If **NO**) Do you feel they should be different? **Please explain.**

13. Are different evaluation instruments used for evaluating **SPECIAL** versus **MAINSTREAM** vocational education programs for special populations?

(Circle number of your answer)

1 **YES**

(If **YES**) How do they differ?

2 **NO**

(If **NO**) Do you feel they should be different? **Please explain.**

14. What types of evaluation instruments are used for evaluating vocational education programs for special populations?

(Please explain for each group)

1 **HANDICAPPED:**

2 **DISADVANTAGED:**

3 **LIMITED ENGLISH PROFICIENT:**

4 **SINGLE PARENTS:**

15. Do you evaluate the involvement of community-based organizations in vocational programs for special populations?

(Circle number of your answer)

1 **YES**

2 **NO**

(If **YES**) What criteria do you use to assess the benefits of such involvement?

16. What are the major problems with evaluating vocational education programs for special populations?

(Please address each group as necessary)

1 **HANDICAPPED:**

2 **DISADVANTAGED:**

3 **LIMITED ENGLISH PROFICIENT:**

4 **SINGLE PARENTS:**

5 **SEX EQUITY:**

17. What types of evaluation reports (e.g., followup studies, program review reports) are required by the state with respect to vocational programs for special populations?

18. How are these evaluation reports used to improve vocational programs for special populations? Please explain.

19. **What exemplary teaching and instructional methods** have been used to strengthen the **academic basic skills** of special populations?

(Please check all that apply for each group)

	Method	Reading	Writing	Computational
1	Computer Assisted Instruction	[1]	[2]	[3]
2	Individualized Instruction	[1]	[2]	[3]
3	Group Instruction	[1]	[2]	[3]
4	Team Teaching	[1]	[2]	[3]
5	Peer Tutoring	[1]	[2]	[3]
6	Role Playing	[1]	[2]	[3]
7	Simulation	[1]	[2]	[3]
8	Field Trips	[1]	[2]	[3]

	Method	Oral Communication	Science	Solving
1	Computer Assisted Instruction	[1]	[2]	[3]
2	Individualized Instruction	[1]	[2]	[3]
3	Group Instruction	[1]	[2]	[3]
4	Team Teaching	[1]	[2]	[3]
5	Peer Tutoring	[1]	[2]	[3]
6	Role Playing	[1]	[2]	[3]
7	Simulation	[1]	[2]	[3]
8	Field Trips	[1]	[2]	[3]

20. What kinds of teaching and instructional methods have you found to be most effective with special populations in vocational education?

(Please address each group as necessary)

1 **HANDICAPPED:**

2 **DISADVANTAGED**

3 **LIMITED ENGLISH PROFICIENT:**

4 **SINGLE PARENTS:**

5 **SEX EQUITY:**

21. In your opinion, what **academic basic skills** are most in need of strengthening for special populations enrolled in vocational education programs?

(Please check all that apply for each group)

	Reading	Writing	Occupational
1 Handicapped	[1]	[2]	[3]
2 Disadvantaged	[1]	[2]	[3]
3 Limited English Proficient	[1]	[2]	[3]
4 Single Parents	[1]	[2]	[3]

Method	Oral Communication	Science	Solving
1 Computer Assisted Instruction	[1]	[2]	[3]
2 Individualized Instruction	[1]	[2]	[3]
3 Group Instruction	[1]	[2]	[3]
4 Team Teaching	[1]	[2]	[3]
5 Peer Tutoring	[1]	[2]	[3]
6 Role Playing	[1]	[2]	[3]
7 Simulation	[1]	[2]	[3]
8 Field Trips	[1]	[2]	[3]

22. Do collaborative efforts exist between academic and vocational education teachers to strengthen the academic skills of special populations in vocational education?

1 **YES**

2 **NO**

(If **YES**) **Please explain**

23. Are Individualized Education Plans (IEP) serving their intended purpose (Circle number of your answer)

1 **YES**

2 **NO**

24. What should be included in the Individualized Education Plan (IEP), that addresses the **academic basic skills** of special populations in vocational education? **Please explain.**

25. Under what conditions should special populations students be placed in special or mainstream vocational education programs?

(Please address each group as necessary)

1 **HANDICAPPED:**

2 **DISADVANTAGED:**

3 **LIMITED ENGLISH PROFICIENT:**

4 **SINGLE PARENTS:**

26. Compared to students who are not classified as special populations, what problems have you encountered that you would consider unique to working with those students?

(Please address each group as necessary)

1 **HANDICAPPED:**

2 **DISADVANTAGED:**

3 **LIMITED ENGLISH PROFICIENT:**

4 **SINGLE PARENTS:**

27. What are the major issues that remain unresolved with respect to vocational education programming for special populations?

(Please address each group as necessary)

1 **HANDICAPPED:**

2 **DISADVANTAGED:**

3 **LIMITED ENGLISH PROFICIENT:**

4 **SINGLE PARENTS:**

28. What types of support services are available in your state for local level vocational education programming for special populations?

(Please check all that apply for each group)

	Support Services	Handicapped	Disadvantaged	Limited English Proficient
1	Special Instruction	[1]	[2]	[3]
2	Transportation	[1]	[2]	[3]
3	Child Care	[1]	[2]	[3]
4	Stipends	[1]	[2]	[3]
5	Counseling	[1]	[2]	[3]
6	Supplies and Materials	[1]	[2]	[3]
7	Adaptation of Curriculum	[1]	[2]	[3]
8	Special Equipment	[1]	[2]	[3]
9	Special Facilities	[1]	[2]	[3]
10	Job Placement	[1]	[2]	[3]
11	Vocational Assessment	[1]	[2]	[3]
12	Other (please specify) _____			

	Support Services	Single Parents	Sex Equity
1	Special Instruction	[1]	[2]
2	Transportation	[1]	[2]
3	Child Care	[1]	[2]
4	Stipends	[1]	[2]
5	Counseling	[1]	[2]
6	Supplies and Materials	[1]	[2]
7	Adaptation of Curriculum	[1]	[2]
8	Special Equipment	[1]	[2]
9	Special Facilities	[1]	[2]
10	Job Placement	[1]	[2]
11	Vocational Assessment	[1]	[2]
12	Other (please specify) _____		

29. Which year of schooling should special populations students be given a prevocational or an occupationally specific vocational education?

(Please check for each group)

		Prevocational		
		Elementary (1-6)	Junior High (7-9)	Secondary (10-12)
1	Handicapped	[1]	[2]	[3]
2	Disadvantaged	[1]	[2]	[3]
3	Limited English Proficient	[1]	[2]	[3]
4	Single Parents	[1]	[2]	[3]

		Occupationally Specific		
		Elementary (1-6)	Junior High (7-9)	Secondary (10-12)
1	Handicapped	[1]	[2]	[3]
2	Disadvantaged	[1]	[2]	[3]
3	Limited English Proficient	[1]	[2]	[3]
4	Single Parents	[1]	[2]	[3]

30. What percentage of the special populations in your state are currently enrolled in each of the following vocational education service areas?

	Service Areas	Handicapped	Disadvantaged	Limited English Proficient
1	Agricultural Education	_____%	_____%	_____%
2	Business and Office Education	_____	_____	_____
3	Home Economics	_____	_____	_____
4	Health Occupations Education	_____	_____	_____
5	Marketing and Distributive Education	_____	_____	_____
6	Technical Education	_____	_____	_____
7	Trade and Industrial Education	_____	_____	_____

	Service Areas	Single Parent	Sex Equity
1	Agricultural Education	_____%	_____%
2	Business and Office Education	_____	_____
3	Home Economics	_____	_____
4	Health Occupations Education	_____	_____
5	Marketing and Distributive Education	_____	_____
6	Technical Education	_____	_____
7	Trade and Industrial Education	_____	_____

31. Please indicate the percentage of special populations students who are enrolled in vocational education programs in your state by ethnic background for the 1985-86 school year?

(Please indicate percent for each group)

	Ethnicity	Handicapped	Disadvantaged
1	American Indian or Alaskan	_____%	_____%
2	Asian American or Pacific Islander	_____	_____
3	Black (not Hispanic)	_____	_____
4	Hispanic	_____	_____
5	White (not Hispanic)	_____	_____
6	Other (please specify)_____	_____	_____
	_____	_____	_____

	Ethnicity	Limited English Proficient	Single Parent
1	American Indian or Alaskan	_____%	_____%
2	Asian American or Pacific Islander	_____	_____
3	Black (not Hispanic)	_____	_____
4	Hispanic	_____	_____
5	White (not Hispanic)	_____	_____
6	Other (please specify)_____	_____	_____
	_____	_____	_____

32. What percentage of the special populations students enrolled in vocational education programs in your state have been placed in jobs during the past 5 fiscal years?

	Handicapped	Disadvantaged	Limited English Proficient	Single Parents
FY 1981-82	_____%	_____%	_____%	_____%
FY 1982-83	_____	_____	_____	_____
FY 1983-48	_____	_____	_____	_____
FY 1984-85	_____	_____	_____	_____
FY 1985-86	_____	_____	_____	_____

33. What percentage of the special populations students enrolled in your state have completed vocational education programs during the past 5 fiscal years?

(Please indicate percent for each group)

	Handicapped	Disadvantaged	Limited English Proficient	Single Parents
FY 1981-82	_____%	_____%	_____%	_____%
FY 1982-83	_____	_____	_____	_____
FY 1983-48	_____	_____	_____	_____
FY 1984-85	_____	_____	_____	_____
FY 1985-86	_____	_____	_____	_____

34. What percentage of the special populations students enrolled in vocational education programs in your state have dropped out of school during the past 5 fiscal years?

(Please indicate percent for each group)

	Handicapped	Disadvantaged	Limited English Proficient	Single Parents
FY 1981-82	_____%	_____%	_____%	_____%
FY 1982-83	_____	_____	_____	_____
FY 1983-48	_____	_____	_____	_____
FY 1984-85	_____	_____	_____	_____
FY 1985-86	_____	_____	_____	_____

35. What percentage of special populations students who enrolled in vocational education programs in your state are male and female for the 1985-86 school year?

(Please indicate percentage for each group)

	Handicapped	Disadvantaged	Limited English Proficient	Single Parents
1 Male	_____%	_____%	_____%	_____%
2 Female	_____	_____	_____	_____

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